ILLINOIS

January, 1943

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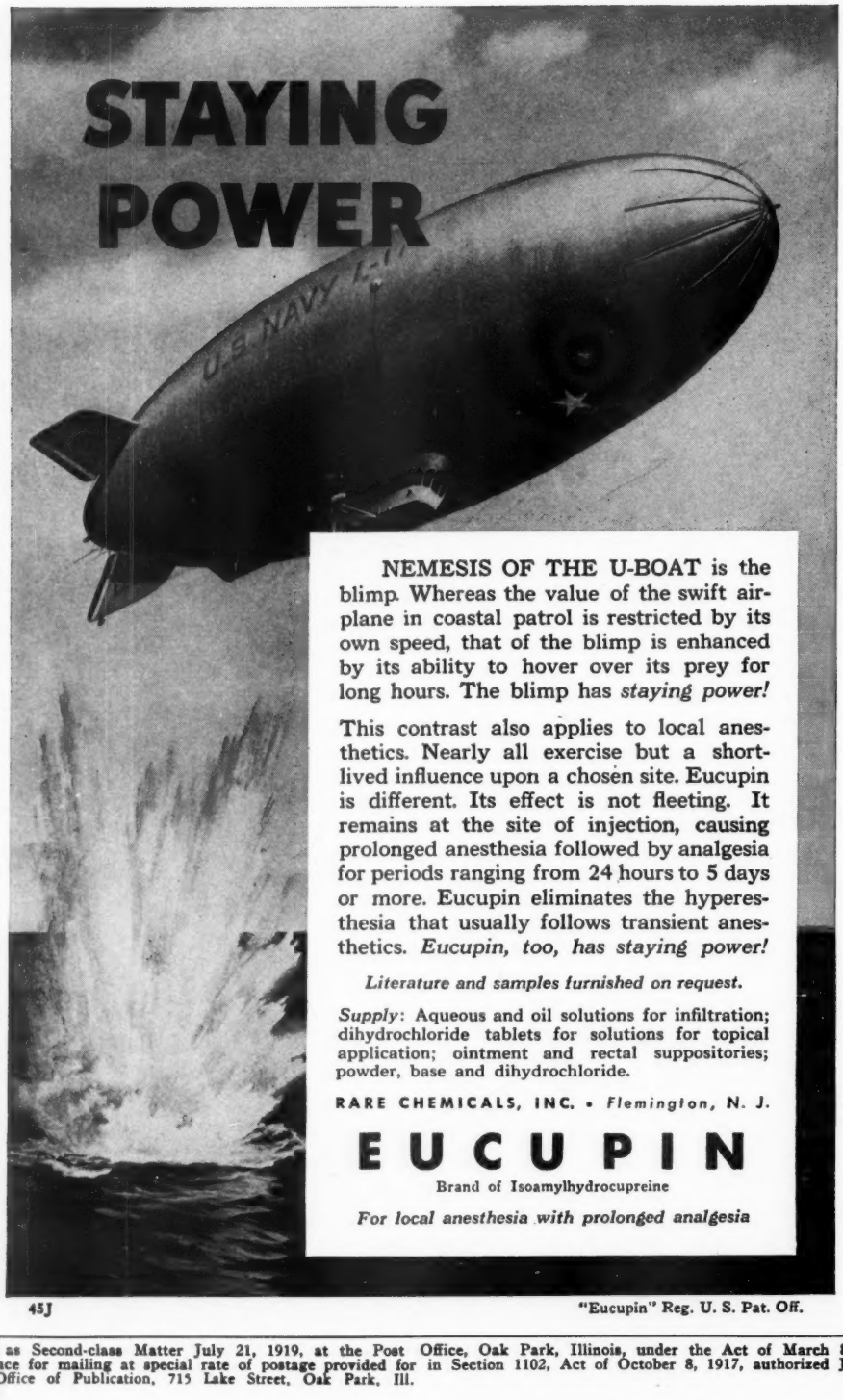

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Medical
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The Illinois Medical Journal

January, 1943

VOL. 83, NO. 1

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Philip H. Kreuscher, Harry Culver.

Editorials

HAPPY NEW YEAR

The United States on this New Years Day, is on its second year of war. Much has been accomplished in the year which has just ended. Thousands of planes, tanks, and many other essential appliances of modern warfare have been sent to all parts of the world.

It is no longer a defensive war, but already the United Nations have started offensives on several fronts. The American soldier's and sailors are receiving the best medical care given to warriers anywhere in the world. Thousands of the thoroughly competent physicians of this country are on duty wherever members of the fighting forces are located.

Illinois has responded nobly, indeed, and there are nearly 4,000 physicians from this state now in service. The United States is and always has been a peaceful nation and being at war is not at the request of our people but through most unfortunate circumstances which came not from the desires of the American people.

The citizens of the United States are willing to carry on in civilian life to turn out the armaments, food and many other supplies necessary to bring the war as speedily to an end as is humanly possible. They are willing to take the many necessary sacrifices and be denied the many blessings enjoyed normally only in a Democracy. Our farmers with their enforced reduced help, will carry on in providing the essentials of life to all.

The members of the medical profession must carry on even though in many communities throughout the country, there remains only enough physicians to give adequate medical care through working longer hours and giving up many non-medical activities they have enjoyed in the past.

Physicians will continue to attend medical meetings, even though they may be unable to travel the distances to meetings as many have done in recent years. Our Medical Journals will carry on, cooperating in every way possible in the war effort and at this time it seems quite probable that the number of pages in each issue will be reduced 10% with these unusual conditions confronting us. The Illinois Medical Journal, the Editorial Board, Journal Committee, Editor and Business Manager wish one and all of the thousands of readers — *A Happy New Year.*

THE HONOR ROLL

We are publishing in this issue of the Illinois Medical Journal, a list of physicians from Illinois now in the armed forces. The list is probably not complete, as occasionally the reporting of physicians entering service is delayed for several weeks. The long list however, shows

conclusively that Illinois is not a slacker state, and that the medical profession has responded nobly to the call of the Government for medical personnel.

There are many communities throughout Illinois where the minimum requirement of physicians to civilian population now exists. There are some communities where physicians are needed, and efforts are now being made to replace physicians from communities where they can be spared, to the places in need of additional physicians. This of course, is done on a voluntary basis.

It is believed by those who have given much thought to the problem, and have made careful studies of the present situation in Illinois, that it may not be necessary to bring in physicians from other states, so long as re-locations within the state will meet the present requirements.

Likewise every effort will be made to supply essential physicians for industries, ordnance and other essential plants, for the care of the essential workers is highly important in the present war effort.

Anyone looking over this long list of medical officers in the armed forces, and noting that someone has been overlooked, should notify the Secretary of the omission as soon as possible, and additional lists will be published in an early issue of the Journal. At this time other Illinois physicians are entering service daily, and it is possible that a number of recently inducted officers will not appear in this list.

To those members of the medical profession who are in service on the seven seas, or the five continents, the Illinois State Medical Society sends greetings. We all know that each of you will do the work to which you are assigned, efficiently and satisfactorily. We are all thinking of you and will wait patiently for the day when you are safely returned for civilian duties.

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Send advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL, 30 N. Michigan Avenue, Chicago.

Original articles and membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Managing Editor, 30 N. Michigan Ave., Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada, $3.50. Single current copies, 50 cents.

Maj. Lemuel E. Day
1896-1942

Death came to one of Illinois State Medical Society's best known members when Maj. Lemuel E. Day died of heart failure in the jungles of New Guinea while serving his country.

Maj. Day graduated from Rush Medical College in 1925. He was actively interested in all affairs of the Society, and served as a member of the Council since his election in May of 1933.

Memorial Services were held for Maj. Day on Sunday, January 10th at the Sauganash Community Church in Chicago at 3:00 p.m.

For the following stirring and detailed story of his heroism and death by George Weller, we are indebted to the Chicago Daily News Foreign Service.

★ ★

CHICAGO DOCTOR DIES A HERO IN PAPUA

By GEORGE WELLER

SPECIAL RADIO

To The Chicago Daily News Foreign Service.

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With American Forces in New Guinea, Dec. 26—(Delayed)—In the spotted light and shade of the creeper-hung Papuan jungle, the phonograph's voice sounded thin and unreal. It was hot, sticky and oppressive, with New Guinea's marsh-borne odor of aged mud and dried kunai grass. The phonograph was playing "Beautiful Isle."

No leaf stirred. Finally the record came to a close and the music ceased. The body of Maj. Lemuel Edward Day of Chicago, the most beloved surgeon of the American forces battling in the bitter mud of Papua, was lowered with all care into his grave. There was no flag to cover him, no bugler to sound taps. This is a deadly war going on here and military appurtenances like flags and bugles are still far away.

But the staff of his small and much-bombed field hospital felt that they had to do something for "Pop" as they called him. So, after the Baptist chaplain, Almus B. Polsgrove of Tupelo, Miss., and Charleston, S. C., read the funeral service, they wound up Pop's old phonograph which had been played to cheer them up in the grassroofed hospital's hardest times, put on his favorite "Beautiful Isle" and played that.

Gave His Life Like Soldier

It was something extra because, although sacrifice is the law of medicine, few give their lives as Pop Day gave his.

"Pop gave his life to the Papuan campaign just as certainly as any soldier who falls fighting his way across the swamp," said Capt. William F. Edwards of New Albany, Ind.

Maj. Lemuel E. Day

Day, well known on Chicago's Northwest Side for his private practice, was a big man, weighing 234 pounds. His incredible labors in great danger in the campaign on the northern side of the Owen Stanleys had pared his muscular figure down to about 200. When he passed away, sleeping in a tent with six fellow doctors, his normally dark hair had turned wholly gray.

He left his home at 6142 N. Kirkwood av., his wife, a 16-year-old daughter and twin 14-year-old boys at a time when he might reasonably have stayed out of uniform. He died here in the jungle two days before Christmas, which would have been the 20th anniversary of his marriage, and two days after receiving a silver star for heroism during the bombing of his hospital.

"What gets us," said his fellow doctors, Maj. Peter Gaberman of Chicago, Capt. Leonard K. Stalker of Buffalo and Lt. Julius J. Gutow of Flint, Mich., "is that he was always so solicitous of everybody else's welfare."

Died with Japs Overhead

Day died of heart failure during the night when some Jap bombers which had before harassed his hospital with bombing and strafing were overhead. But on his last evening, he was as busy as ever when the air alarm sounded, getting wounded soldiers into slit trenches.

Day was head surgeon of the board taking Chicago doctors for the Army. Asked why he himself enlisted, he said:

"I was having difficulty getting enough surgeons of the right kind. So I said to myself, "well, if I'm getting doctors why shouldn't I go myself?"

Day entered the Army on June 15 and received orders to go overseas in July, joining under Col. H. B. Wolowitz of Hackensack, N. J. On Nov. 24, the hospital Day had set up after flying across the mountains to a secret airfield, was bombed and the next day it was strafed by Zeros, despite the 40-foot Geneva cross on the ground. Five days later, on Nov. 30, a Jap bomber came low, strafed three times, then dropped a demolition bomb which blew Capt. Edward's glasses from his face. Then followed the war anniversary attack on Dec. 7.

Bombs Kill Nine in Hospital

In this deliberate and inexcusable attack, nine patients were killed, another body of one who crawled away to escape Jap fire having been discovered in the grass the afternoon before Day's death. When the bombing began, Day was amputating on his crude operating table of reeds bound together with withes. He suffered his first heart attack then. Although continually exhorted by his close collaborating surgeon, young Capt. Lloyd Taylor of Oklahoma City, to relax his labors, Day insisted on working at virtually the same 24-hour pace.

Day's last words when the night bombers passed over were addressed to Taylor. The young doctor had asked permission when emerging from a slit trench to place his trousers on Day's bed. Day's characteristically warm response was, "Why you know, son, that in my eyes you can never do wrong."

Proud of 'Flying Hospital'

During the air raid itself, Day was explaining to a Red Cross man and James Stewart of Oneonta, N. Y., how his "flying hospital" had been so speeded up that he could go anywhere trucks and trailers were available — though dependent on jeeps here — and be prepared to do major operations "with sterilizers steaming" in one hour and 40 minutes.

Day's estimate of himself was, "I'd make a poor Army commander because I am not hard-fisted enough."

Day's soothing words, "You'll be all right, fellow, in a little while," were heard by many Americans and Australians as he bent above their beds. He hated being bombed principally because it affected his work and called the attack the "most depressing thing that ever happened in my life."

Day, who now, at 46, shares a small cemetery with three fallen Australians and three Americans, felt himself more deeply involved in the war because the brother of his wife, Lucille E. Day, was killed in the Philippines.

Here is what those enlisted men who worked under Day told your correspondent they thought of him.

Louis Williams of St. Louis: "He was the most wonderful man I ever met."

John Jacobsin of 5438 N. Luna av., Chicago: "He was the jovial kind and nice to work with."

George Lutiger of 5322 W. Van Buren St., Chicago: "As a commander, the major was tops."

Frank Glab of 1318 N. Wolcott av., Chicago: "Pop was our grand old man."

William J. Storm of 1350 Newport st., Chicago: "The major was like a father. He always treated his patients and ourselves swell."

Sidney Thomson of 2924 N. Major, Chicago: "Day was a helluva swell fellow and a good boss to work for."

Harold Wells of 146 W. Washington, West Chicago: "No grander guy and doctor ever lived than Maj. Day."

Lawrence Stanton of 3907 Greenview av., Chicago: "No matter how small a soldier's wound, the major always looked after him personally and took care that he recovered. He was our daddy, that's all."

Corp. Alois Vogt of Dubuque, Iowa: "The major was a father to every one of us."

Diary Describes Bombing

The following are excerpts from Day's journal:

Dec. 7, 11:30 a.m.: On this first anniversary of the Pearl Harbor episode, as we were preparing an appendectomy on an Australian soldier, we were attacked by three enemy dive-bombers who raked us with machine-gun fire and dropped two bombs near Wards 3 and 4 resulting in the death of three patients in Ward 3 and five in Ward 4 and the wounding and mangling of 30 to 40 other patients. At approximately 1:30 p.m. a formation of 18 enemy bombers, screened by Zeros, interrupted our work on previously injured men, flying over our entire field and dropping bombs of various types. This terrifying experience resulted in the mangling of the legs of two of the men, one of whom was a patient, the other probably on his way to the hospital.

Dec. 8: Waiting to receive sick and wounded from the front to care for them until the earliest possible plane for evacuation to Port Moresby. Definite treatment can never be practicable in this jungle.

Fever Patient Wanders Away

Dec. 15: During the night one of our fever patients became delirious and leaped from bed, crawled under the side of the tent and disappeared into the jungle. Efforts to find him were unsuccessful. The Quartermaster detachment in the village was notified so it would not shoot him by mistake. At 1:30 this

afternoon he was picked up near the village wandering in a daze and promptly evacuated on the next plane.

Dec. 17: The moon is a little more than half full. Two times recently evening reconnaissance planes have more or less covered this entire area. Tonight at 10 o'clock, two squadrons of bombers dropped about 25 bombs, none of which landed close to the hospital.

Dec. 18: After last night's bombing enemy bombers were back again at 2:30 and 5:30 this morning dropping some bombs each time, none of which hit too near us. Little sleep was had by anybody. Again they were back over the area and within hearing distance for two hours. About 20 bombs were dropped, none of which landed near us. Night life when there is moonlight is spent half in bed, half in the trenches — a somewhat ghastly nightmare.

Saturday, Dec. 19: The moon was just short of full but nature kindly provided clouds and a downpour of rain. As a result enemy planes were not over. We pray for more clouds and more rain at night until the bright moonlight phase has passed.

That was the last entry in Day's notebook.

THE MEDICAL PROFESSION

NOTE: The following tribute to the medical profession recently came to the office of the Editor, and we are publishing it as submitted, to show what others think of the doctor.

Do you ask me, What think I of Medicine as a Profession? Would you have me list the qualifications and the duties and the obligations of him who would practice it honestly, efficiently and joyfully?

The "Ministry" is the purest, most unselfish and altruistic of all callings, because in a word it demands so much and yields so little — so little in bread and butter and clothes and gold and worldly pleasures. On the other hand, the Ministry demands what? A very great deal — a robust virile body, an acutely active clean mind, both of them scourged by self denial so that they may ever withstand the constant keen, aye skeptical, criticism of a cynical world!

Finally the Ministry yields what? All that priceless satisfaction which warms one's inners, the inevitable lot of him who deliberately devotes his life to sacrifice, sacrifice to his fellowman, to his God, and Gentlemen, I say to you "Medicine and Ministry are cut from the same cloth."

What think I of Medicine as a profession? It is a glorious vocation and those within it fold are the envy of those without. The average human being builds as strenuously as the coral insect, and like it, he disappears, content if he has left some minute constructive atom in this topsy-turvy world. But the physician who through knowledge, skill, personality or kindness is able to smooth one wrinkle from the brow of care, or change one moan or sob into blithesome song, or wipe away one tear, and in its place put a shining jewel of joy, such a man is indeed a benefactor. He lives, he breathes, he exudes his own God-given individuality.

And so when Death comes to the Physician, then even as our earthly sun goes below the horizon and yet is not set, since the heavens glow indefinitely after its departure, so even after the vital spark of the "Doctor" goes out, the radiance of his personality illumines the sky of his world ad infinitum.

PAPERS FOR THE 1943 ANNUAL MEETING

The Illinois State Medical Society is planning to hold the 1943 annual meeting scheduled for Chicago, on May 18, 19, 20 at the Palmer House. At a recent meeting this matter was thoroughly discussed by the Council, then later by the Committee on Scientific Work and plans are now being made for an outstanding program which it is hoped will be of general interest to all physicians. The 1943 meeting will be considered a war meeting, and efforts will be made to feature the role of medicine in war time and also extend invitations to the many medical officers in the Army and Naval forces stationed in Illinois to attend the meeting and participate in the discussions.

There will be more general sessions scheduled than usual, with all of the scientific sections participating, but provisions will be made for individual sections to conduct their own technical sessions during the meeting.

Members of this Society who desire to present papers before any of the sections are requested to write to the officers of the proper section giving the information, and including the title of the paper, and a short synopsis or abstract so

that the officers will be better enabled to determine whether or not the paper will fit in with the program scheme, and also keeping in mind the fact that with so many general sessions, there will be less time than usual available for technical subjects.

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* In service.

** A vice-chairman to be appointed.

NOTE: The Section on Pediatrics and the Section on Obstetrics and Gynecology are required to divide the time equally during the meeting, and cannot meet simultaneously unless in joint session.

Physicians interested in presenting papers at the 1943 meeting should write to the above named officers.

NATIONAL CONFERENCE ON MEDICAL SERVICE

The 1943 annual meeting of the National Conference on Medical Service will be held at the Palmer House, Chicago, on Sunday, February 14, 1943, beginning at 9:00 A.M. The officers for this meeting, are J. D. McCarthy, M.D., President, Omaha, Nebraska, and W. L. Burnap, M.D., Secretary, Fergus Falls, Minnesota.

The program being arranged will be most timely and will be devoted principally to a discussion of present day war problems, and some of those pertaining to medical practice immediately following the war.

This organization is unique in that it has no definite membership roll, there are no annual dues, and every physician is cordially invited to be present and participate in the deliberations throughout the day. A complete program will be published in the February Illinois Medical Journal.

Note:—

Publication of the Honor Role in this issue of the JOURNAL makes it necessary to omit the Clinico-pathological Conference. This popular department will appear in its regular place in the February issue.

Correspondence

AGED PUBLIC ASSISTANCE RECIPIENTS AND THE MANPOWER SHORTAGE

By Wallace W. Clark
Acting Superintendent

Opportunities for elderly persons to hold jobs or secure new ones are apparently better than they have been for several years.

The marked decrease in the number of applications for Old Age Assistance during the year ending June 30, 1942, and the change in the ratio of men to women who have been given Old Age Assistance grants in the last year indicate that the period of self-support for older persons is longer than it has been at any time since the enactment of the Old Age Assistance law.

During the year ending June 30, 1942, the smallest number of applications in the history of the Division was filed—a decrease of 19 per cent under the former year, and of 32 per cent under the year 1940. The number of applications filed was 5,620 less than in 1941. The total number of applications filed was 23,389. In 1941 the figure was 29,009; in 1940, 32,050.

FEWER GRANTS GIVEN

The increase in the number of recipients added to the Old Age Assistance roll from June 30, 1941, to June 30, 1942, was 3,773, the lowest increase in any year in the Division's history. Furthermore, relating the total number of recipients on the assistance roll at the end of the 1940-1941 fiscal year to the increase, the percentage increase was only 2.5 per cent during the year 1941-42 as compared with 6.2 per cent for the previous year.

MEN AND WOMEN

Fifty-two per cent of the persons in Illinois 65 years of age and over are women. But the number of women added each year until 1940 to the recipient roll has been smaller than the number of men. Since 1940, however, the number of men granted Old Age Assistance has decreased more rapidly than the number of women and the ratios of men to women who have been given assistance grants have been reversed. During the 1938-39 fiscal year the men to whom Old Age Assistance grants were given were 52.7 per cent of the grantees; in 1939-1940 they were 49.7 per cent; in 1940-1941, 47.5 per cent; in 1941-1942, 46 per cent. Between 1940-1941 and 1941-1942 the number of men to whom grants were given decreased 14.7 per cent and the number of women, 9.3 per cent. These figures indicate that longer periods of employment for older men, as a result of the shortage of manpower during the current emergency, may be responsible for a lengthened period of independence.

THE EMPLOYMENT SURVEY

In February, 1942, a survey was begun in all County Departments of Public Welfare of a sample group of recipients under the age of 75 to learn their former occupations, ages, and physical ability and willingness to accept employment. The men whose work experience had been in agriculture or skilled and semi-skilled labor were asked if they were able and wished to return to work, if jobs were available. Emphasis was placed on the facts that return to employment was entirely voluntary, and that when a

job was terminated the recipient, if still eligible for Old Age Assistance, would be immediately reinstated on the Assistance roll. Willingness to accept employment was shown by a large number of recipients, but their physical ability was found to be insufficient for sustained labor.

Based upon the findings of this survey it is estimated that 1,830 men recipients of Old Age Assistance are willing and able to work if jobs are available for them. These men want to go to work in order to become self-supporting and to contribute all the labor of which they are capable.

Six hundred and seventy-five, or approximately 37 per cent of the group who wish to go back to work and are able to do so have had agricultural experience as farm owners, tenants, or farm laborers. The others are skilled and semi-skilled laborers. Of this laborer group, 273 have had factory experience; 368 have worked in the building trades; 514 in miscellaneous industries.

WHY NUMBER IS SMALL

One of the principal factors accounting for the relatively small proportion of recipients who are able to accept employment is advanced age. The average age of recipients at the time Old Age Assistance grants are made to them is 68.5 years. The average age of all recipients currently receiving Old Age Assistance is estimated to be 73 years.

From the Division's experience, aged persons in Illinois apply for and receive grants only when no other source of support is available. Only one out of every four persons 65 years of age and over in Illinois receives Old Age Assistance at this time. The fact that three out of four aged persons do not receive Old Age Assistance indicates that those persons who reach the Old Age Assistance roll have sought this form of aid only after every effort to maintain financial independence has been exhausted.

Another reason these aged persons hesitate to seek full-time employment is that almost one-half of all Old Age Assistance recipients are under the care of a physician for some form of disease or physical disability. Many aged men on the recipient roll may be in fair physical condition themselves, but their wives are ill and must rely upon the housekeeping, and upon the bedside or nursing care of their husbands.

It may also be observed that many recipients who are unable to accept full-time employment are able to and do engage in part-time work.

PLACEMENT EFFORTS CONTINUE

Through the United States Employment Service and local community groups who are working to meet the necessary labor demands in various parts of the state, efforts are being made to find suitable jobs for recipients willing to go back to work whose work experience and physical ability can be advantageously used.

The Welfare Bulletin, Sept., 1942

WAR SURGERY MEETING

At a time of national emergency, such as we now face, intellectual forces aptly adapt themselves to circumstances under which they must advance. Therefore, to fill the need for inspiration and information with regard to the war medical problem, two great medical societies, the American Academy of Orthopedic Surgeons and the Clinical Orthopedic Society, have combined their annual meeting to meet his challenge. This joint meeting will be held on January 17, 18, 19, and 20, 1943, at the Palmer House in Chicago. The keynote of this occasion will be "War Surgery" and its application to civil practice. Those members of the medical profession in good standing, who are interested in bone and joint surgery and its allied fields, may have the privilege of attending.

There will be four sections of interest connected with this program.

1. A clinical program.
2. A general scientific assembly.
3. An instructional section.
   (a.) Group discussion courses.
   (b.) Motion pictures of surigcal methods and technique.
4. Scientific exhibits.

The speakers and faculty are drawn from the leading surgical authorities of this country, as well as distinguished guests from England, Canada, South America and the Hawaiian Islands. These will include a sizable group of Army and Navy Surgeons who have had to deal directly with the war casualties from across both oceans.

Thorough, concise, short discussion courses will be offered on the following subjects. Each

will have an outstanding faculty, many of whom are in military service.

I. Surgery of the Hand
II. Fractures
III. Peripheral Nerve Injuries
IV. Amputations
V. Lame Backs
VI. Surgery of the Hip
VII. Surgery of the Knee
VIII. Burns and War Plastic Procedures
IX. Foot Disabilities
X. Differential Diagnosis of Bone Pathology
XI. Reconstructive Surgery Following Trauma of the Supper Extremity
XII. Surgical Anatomy

There will be several special features in connection with the general program.

A. An afternoon devoted to "Complicating Trauma Associated with Orthopedic casualties." This will include a discussion of the following subjects.

1. "Shock — Its Early Recognition and Treatment."
2. "Blast, Crush and Compression Injuries."
3. "Thoracic Injuries."
4. "Head and Spine Injuries."
5. "Gunshot Injuries to Abdomen."
6. "Injuries to Genito-Urinary Tract."

B. One evening will be devoted to the subject of "Chemotherapy in the Treatment of Wounds," with eminent authorities who have studied the subject from various angles.

C. Another evening will be given to a debate on "The Kenny Treatment for Anterior Poliomyelitis."

There will be no time for play. Morning, afternoon and evening will be devoted entirely to the problems as they have been outlined. As has been stated previously, members of the medical profession who are interested in such a program are welcome to attend, and may receive an invitation by writing to the Secretary, Dr. Myron O. Henry, 401 Medical Arts Building, Minneapolis, Minnesota. If you expect to attend, hotel and railroad reservations should be made early.

PHARMACIST'S ROLE IN VENEREAL CONTROL

Pharmacists are playing an important role in the wartime control of venereal diseases, the American Social Hygiene Association announced today in making available to the medical profession a report based on a recently completed survey.

Drugstore counter prescribing for syphilis and gonorrhea has greatly decreased, the Association reports. Forty-six cities in fifteen states were visited, and 716 drugstores studied. Only 11 percent of the drugstores visited offered diagnosis and treatment for conditions presumed to be syphilis and gonorrhea. Thirty-two percent sold remedies on specific request but did not attempt to diagnose, and 57 percent urged immediate and well qualified medical care, and in a large proportion of the drugstores where remedies are stocked and sold, the druggist advised that "self medication is bad and dangerous business."

This survey showed a decided improvement over conditions found in 1939 and 1940. During 1939 under the cooperation of the United States Public Health Service and the American Social Hygiene Association, a similar survey was made in thirty-five cities covering twenty-six states. In these communities, 1,151 drugstores were visited. Tabulation of the results of the interviews showed that in 62 percent of the drugstores visited offers were made to diagnose and treat syphilis or gonorrhea. In 31 percent the persons consulted did not attempt diagnosis but offered for sale a variety of patent remedies, and only 7 percent of the whole number refused to make a diagnosis or sell remedies. Many of the druggists in this small group took the time and trouble to advise the patient to seek adequate medical care and make an honest effort to dissuade him from any attempt of self medication.

The report of the survey was published in "Venereal Disease Information" in January, 1940. It received wide publicity and led to the formation of the Joint Committee of the American Pharmaceutical Association and the American Social Hygiene Association, organized to bring about closer cooperation between physicians and the pharmacists in eradicating syphilis and gonorrhea. This Committee has constantly

urged druggists to follow, with reference to venereal diseases, the principles of ethical practice enumerated below:

1. The pharmacist should make no diagnosis.
2. The pharmacist should not prescribe for patients.
3. The pharmacist should refer patient to physicians.
4. The pharmacist should not sell "patent medicines" and thus encourage self medication of these infectious diseases.
5. The pharmacist should distribute literature of an informational nature regarding syphilis and gonorrhea. Such material may be obtained from health departments and from the American Social Hygiene Association.
6. The pharmacist should cooperate with the pharmaceutical society and official and voluntary health agencies in promoting high professional standards.
7. The pharmacist should stock and sell only reliable products for chemical and mechanical prophylaxis of venereal diseases, and provide reliable information regarding the value and limitations of accepted prophylactics used under approved conditions.

When subsequent soundings were made during 1940 in many of the thirty-five cities originally studied, a decided trend away from the former conditions was discernible. In many drugstores where diagnosis and treatment had been offered, counter prescribing and the sale of nostrums were no longer practiced. In their places many druggists recommended competent physicians and various venereal disease clinics. This trend away from counter prescribing for venereal diseases has continued as proven by the recent 1942 survey.

STATE MATERNAL WELFARE PROGRAM FOR 1943

We are submitting our new program to familiarize all the readers of the Journal with the work of the Illinois State Maternal Welfare Committee. This program is strictly an educational one but has borne fruit in a very satisfactory manner in the past and is worthy of the support and cooperation of all the medical organizations of the State.

I am particularly interested in calling the attention of the President and Secretary of each county medical society to the importance of replacing immediately any county chairman who has died or been called to the service in order that we may keep our organization up to date and carry out our program.

We also want to encourage the continuation of the programs on prenatal care before medical societies and lay groups, as only by a continued active campaign on this all important subject can the proper interest be maintained. We must not lose sight of the fact that this is a medical problem and although we are all required to do more work than under normal circumstances this educational campaign must be continued and if we fail to do this it will be done through some other agency by social workers.

T. B. Williamson, M.D.
Chairman

SUGGESTIONS FOR COUNTY MEDICAL SOCIETIES AND COUNTY CHAIRMEN

Committee on Maternal Welfare of the Illinois State Medical Society feel that the adoption of the following suggestions by the County Medical Societies will lower the Maternal and Infant death rate within our State.

1. More emphasis should be placed on adequate prenatal care:
   a. Monthly visits up to the seventh month then every two weeks — history — physical examination including pelvic measurements — weight and dietary instructions. Laboratory work consisting of urinalysis, Kahn, blood counts including red, white and hemoglobin, should be done, preferably on the first visit.
2. We recommend that each County Medical Society appoint a Maternal and Child Welfare Committee whose duties should consist of:
   a. Investigate maternal, fetal and early infant deaths for constructive study in reducing mortality. Postmortems on neonatal deaths should be encouraged. This investigation to be carried out by the County Chairmen and other physicians appointed by local medical society; all information pertaining to this study be kept in the hands of the Medical Profession.
   b. Have an adequate number of programs

of maternal welfare and pediatric subjects before local society and hospital groups to meet the need of that community.

c. Encourage the educational program among the nurses of the community by such means as moving pictures and special lectures and special invitations should be rendered to attend obstetrical and pediatric programs before medical groups.

d. Encourage any improvement of local hospital facilities for better maternal care.

3. We suggest that the Chairman of the Maternal Welfare Committee be designated as the County Chairman and be responsible for the furthering of this program in his respective county with the cooperation of local Medical Society.

   We suggest that he appoint a permanent Maternal Welfare Committee composed of professional and lay groups to further the program of lay education.

4. Encourage postgraduate work and refresher courses among the physicians.
5. We recommend consultation in all Obstetrical complications.
6. Encourage programs on Maternal Welfare before hospital staff.
7. We recommend that physicians stress the danger of abortions.
8. Avoid indescriminate use of Oxytoxic Drugs especially in first and second stage.

PROTESTS MOVE TOWARD REGIMENTATION

One of the boldest and least defensible moves yet made toward regimentation of doctors and their patients is that recently suggested for the Chicago Board of Health. This proposes that pregnancy be made reportable to the Board of Health as soon as diagnosed. The woman may tentatively select her own obstetrician, but if he fails to please the Health Department, it would remove the woman from his care and place her under the care of some doctor or institution — presumably a clinic, that happened to be in the good graces of the Health Department. There is little to be said in favor of this idea and much to be said against it. It is an unwarranted invasion of personal and family privacy. It would undoubtedly tend to keep pregnant women from consulting a physician until late in pregnancy because many women do not wish the fact of their pregnancy published to the world at large. It would deny, or at least seriously interfere with, the patient's right to choose her own physician. This was a privilege which the Federal Government was careful to respect in furnishing medical care to persons on relief.

For twenty years the Illinois State Medical Society has spent considerable sums of its own money in educating women to consult a physician early in pregnancy so that adequate care could be given. The proposed order would also result in depriving some women of much needed salary, as many organizations will not keep pregnant women in their employ regardless of the fact that the work may be in no way injurious during the early months of pregnancy.

It would make the Health Department the supreme arbiter of obstetrical practice, allowing it to tell the private physician not only what to do and how to do it but also whether he could do it. Doctors would tend to develop a mental stigmatism keeping one eye on the Health Department and the other on the patient. Certainly this is no time to add extra burdens to an overworked profession.

During war time, bureaucrats are inclined to extend their power. In many cases this is unavoidable. We have to surrender some rights that we reserve to ourselves during peace time. At this time with shortage of personnel and more than the usual concern for the health of the civilian population, health departments might be misled by their laudable zeal into issuing orders or adopting policies that would defeat the very ends sought, as is probably true in this case.

At all times, and especially for the duration, the medical profession and Departments of Health should cooperate as closely as possible. Were this proposed order put into effect it would create friction instead of cooperation.

The Chicago Medical Society has already expressed its strong disapproval of the idea.

It is to be hoped that sober second thought will lead the Health Department to abandon this idea.

103rd ANNUAL MEETING ILLINOIS STATE MEDICAL SOCIETY

Palmer House, May 18, 19 and 20, 1943

An Open Letter to the Medical Profession of Illinois

Dear Doctor:

The Council of your State Medical Society got into a huddle to discuss the Pros and Cons of an annual meeting for this coming year. The "Cons" loomed up pretty formidably, to wit:

An all out war on our hands, shortage of doctors throughout the state throwing an over-load on those of us who are still at home, transportation difficulties, gas and tire rationing, etc., etc.

However, the "Pros" won out easily. In the first place, our Government WANTS us to meet at least once a year to keep informed on the newer things in military and civil practice. In the second place, we, you and I, are entitled to a few short days off and away from our daily grind.

This year, your annual meeting in Chicago will be different from any you have ever attended. It will be a combined civil and military meeting. There will be more general sessions devoted to all the newer and more important changes in practice and therapy. One day will be dedicated to the Army and one to the Navy.

Come and meet Generals and Admirals, and even more important — your buddies and neighbors now in uniform.

Robert S. Berghoff, M.D.
Chairman, General Arrangements.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Dear Members:

As we embark upon another year in the history of our Auxiliary and our home life, we find many changes. Let us be prepared to meet these changes and responsibilities.

Our doctors in service believe more than ever that we, The Woman's Auxiliary, are behind them whether at home or abroad. We may not *grow in numbers during this crisis, but as a body* there is strength to carry on. There can be no excuse for lack of interest in the auxiliary work, if we cooperate and plan carefully together.

I appreciate your expressions of interest and cooperation; your faithful promotion of our project, Hygeia, is of great benefit to the Nutrition Programs; your bulletin subscriptions prove your interest in your sister auxiliary activities; your donation to our very own Benevolence Fund; your extra contributions as auxiliary members to our camps and men in service — at home and abroad; for these reasons, I feel Illinois will come through with flying colors.

For all this I am truly grateful and may the joys of your work and home never diminish until peace shall come once more to bless our homes and our hearts are free to rejoice.

Season's Greetings to all.

Your President,
Mrs. W. J. Wanninger (Mrs. Hilda B.)

CHICAGO CONFERENCE on THE HEALTH OF INDUSTRIAL WORKERS

Palmer House
Chicago, Illinois
January 13th, 1943

Under the auspices of:

CHICAGO MEDICAL SOCIETY
ILLINOIS MANUFACTURERS' ASSOCIATION
ILLINOIS STATE DEPARTMENT OF PUBLIC HEALTH
Division of Industrial Hygiene

In cooperation with:

ILLINOIS STATE MEDICAL SOCIETY
Committee on Industrial Health
CHICAGO BOARD OF HEALTH
CHICAGO SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY
CHICAGO INDUSTRIAL NURSES' CLUB
AMERICAN INDUSTRIAL HYGIENE ASSOCIATION
Chicago Chapter

Palmer House
Grand Ball Room
Chicago, Illinois

AFTERNOON SESSION — 2:30 P. M.

Presiding: Dr. Frederick W. Slobe, Chairman
Industrial Health Committee
Chicago Medical Society and
Illinois State Medical Society

2:30 "The Urgent Need for Better Local Industrial Health Organization"
Dr. Carl M. Peterson
Secretary, Council on Industrial Health
American Medical Association
Chicago, Illinois

3:00 "Why Do Employees Stay Away From Work and What Can We Do About It?"
Dr. Clarence D. Selby
Medical Consultant
General Motor Corporation
Detroit, Michigan

3:30 "How The Small Plant Can Conduct A Health Program"
Dr. Milton H. Kronenberg
Director of Industrial Hygiene
Illinois Department of Public Health
Chicago, Illinois

4:00 "Problems of Employing the Physically Handicapped"
Dr. Fred H. Albee
New York, N. Y.

DISCUSSION:

Opened by Dr. Joseph H. Chivers, Medical Director, The Crane Company

"The Employer's Viewpoint"
Mr. George P. Wardley
Manager, Industrial Relations
Carnegie-Illinois Steel Company

"The Industrial Commission's Attitude"
Mr. Alfred Borah
Chairman, Illinois Industrial Commission

"Medico-legal Aspects"
Mr. Frank R. Peregine

Palmer House
Red Lacquer Room
Chicago, Illinois

DINNER MEETING — 6:30 P. M.

Presiding: Dr. James P. Simonds, Acting President, Chicago Medical Society

Toastmaster: Mr. Sterling Morton, President Illinois Manufacturers' Association

Address: "We Have a Job To Do To Improve the Health of the Industrial Worker"
The Honorable Dwight H. Green
Governor of Illinois

"The Care and Feeding of Executives"
Dr. Walter Alvarez
Mayo Clinic
Rochester, Minnesota

THE WOMEN'S FIELD ARMY OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER is inaugurating a new war service program to consist of a Health Education Unit, a Medical Aide Unit and a Hospital Unit. Several surgical dressing units have been organized in the Chicago area, the largest unit meeting at the Y.W.C.A. Loop Center where business girls assemble every Wednesday evening to make dressings for the indigent cancer patient. Not only is this contributing a service to the Visiting Nurses Association who are at present the recipients but since these dressings are being made of old linens collected by the members of the units, a great saving in gauze for hospital use will result.

The State Commander of the Women's Field Army, Mrs. Arthur I. Edison, reports that since the keynote of the program continues to be control of cancer through education, the interest evinced by those members of the surgical dressing units in the objectives of the Women's Field Army is most gratifying.

The State Headquarters of the Women's Field Army is located at 48 West Division Street, Chicago, and an appeal for freshly laundered white materials is being made so that more units may be organized to assist local hospitals.

Tuberculosis contracted or aggravated because of working conditions is to be considered compensable, but in workman's compensation laws greater consideration should be given to precipitating causes than to predisposing factors. Large numbers of persons with inactive or mildly active tuberculosis are able to work in our factories without becoming ill because working conditions are favorable. But occupations such as that of policeman or soldier, involving bad hours, undue exposure to the elements and other unhygienic conditions, may definitely initiate tuberculous activity. A. Licurzi, Rev. Asoc. med. argent., Nov. 15-30, 1941.

Tuberculosis is increasingly becoming a disease of older, occupied men. So much emphasis has been placed on tuberculosis as a serious disease of girls and young women that its greater havoc among men has not received the attention that it deserves. As a result of the more rapid decline of tuberculosis in females in this country there are today 132 deaths among males to every 100 deaths in females, and only at ages ten to thirty is the mortality higher in females. From The Modern Attack on Tuberculosis by Henry D. Chadwick, M.D. and Alton S. Pope, M.D.

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

The first year of war is behind us, and there is little reason for dismay over our accomplishments. Industry has shown its capacity to produce; management again, looms upon the horizon and erases in a brilliant stroke much of the criticism levelled against it in the past few years. In fact, this war is one of industry, transportation and management, and the record is one of geniuses at work — long hours of work. Let us remember that this giant industry and transportation system was developed in the terrible days of rugged individualism. They come back to us today to bring us victory. There could be no industry, no management, no transportation without labor. That industry in the past was guilty of mal-treating labor socially, economically and politically cannot be denied. That labor once organized, becoming all powerful, retaliated and exercised proof of its social, economic and political power. Quite naturally, czars of labor arose, just as czars of industry had before them and extremes were erected. It is natural that labor is more unwieldy than management because of their large number. Labor has proven itself to be patriotic and democratic under many trying circumstances. Industrial American is a product of management and labor. War America is management and labor producing and transporting necessary war materials to defeat the Axis. If the war can evolve harmony, social and economic understanding between capital and labor it will be of second importance to defeating the Axis. They are working now for a common cause. Let them remember, that we are in the final analysis fighting to save the United States, and so let us be prepared to save it after the war is won.

The Navy off to a bad start has acquitted itself in the traditional American way. The various units of our Army have demonstrated that we have capable military leadership and that our soldiers have that American "Stuff" that wins wars. Wars cannot be won, nor home morale maintained without food. The farmers have kept us adequately fed up-to-date with the odds stacked against them. Selective service (a tremendous job), and the man power commission (another tremendous job) attempting, I suppose, to work together have not demonstrated any great capacity for executive ability or actual knowledge of the task at hand. Perhaps the Army Chiefs were greatly at fault in asking for an army larger than we could properly equip, transport and maintain. Whatever, the cause and regardless of who was responsible it caused a dislodgement between farm production, war material production, and caused an unfair ratio of wages between farm industrial labor. It is gratifying that in the first year of the war we are endeavoring to correct these hurried errors of judgment. I hope Mr. McNutt is the man for the job. Can he turn from politics and his future political chances and attack the job? If he has the courage to do that, he must then demonstrate that he has the real ability for a big job and a troublesome job. If he can do it — then his political future ought to be safe. Every American should lay politics aside and render every assistance to Mr. McNutt in this task that means so much to us. What applies to Mr. McNutt should apply to Leon Henderson's suc-

cessor. If Senator Brown is the man chosen, he is a man attacking a much muddled job. The voters of Michigan disapproved of Senator Brown. There is little that we can find in his background to qualify him for the job. If the President appoints him he must assume the responsibility for a lame duck politician. Again, let us hope that his judgment is good and that he sees in this man qualities of executive ability, and knowledge of his task that has yet to be uncovered.

This first year of war has witnessed the medical profession answering the call for efficient medical service for our armed forces and the people at home. While there will always be some criticism of the methods used I think we must agree that in general it has been handled well. Certainly from the standpoint of efficient service to our armed forces it is a magnificent improvement over World War I.

Let us turn to the problems of peace. There are many who think we should not talk about peace until the war is won — on the theory that it tends to destroy our war effort. Others maintain that unless we lay plans for peace now that we will be caught in hasty negotiations, and that permanent peace will be lost. The government now has a commission formulating plans for peace. The members are Mr. Hull, Secretary of State, Weller, Berle Jr., Dean Acheson, Dr. Hubert Feis and Leo Posvolsky. The American people should be acquainted with their formula. They should know the background of the members. What are their qualifications to formulate a peace and perpetuate that peace for the entire world? Summarizing briefly from an article in Readers Digest - Condensed from the American Mercury by Kingsbury Smith the formula is as follows:

"The plans rest on this basic idea: that the countries now bound together under the name of United Nations shall form the organization of a Better World Order, which will have two main objectives:

To maintain the world peace through the compulsory disarmament of the Axis powers and the policing of the world.

To make membership in the association so beneficial that no nation can afford to remain outside.

The economic benefits to be offered the other nations will include:

1. A system of open trade among the member nations, guaranteeing nondiscrimination in commercial relations.

2. A fair distribution to all member nations of sufficient raw materials to meet their reasonable peacetime needs.

3. American financial assistance for essential enterprises, such as public works programs, in those countries which do not possess the capital for such development.

4. Strict regulation of the supply of commodities among member nations so as to protect the interests of consumer countries.

5. A cooperative movement for the rapid expansion of trade among the member nations to produce materials for markets created by human needs, as in China and India.

In the sphere of political security, the United States will agree to assist those member states which are engaged in forcible resistance to unprovoked aggression. All other member states will be pledged to do likewise.

In return for these benefits, members must fulfill the following conditions:

1. Guarantee to their citizens certain fundamental human rights such as freedom of speech and religion, freedom from terror, and freedom from want.

2. Solemnly promise to settle all international disputes by peaceful methods of arbitration, submitting such disputes to an international court of justice when direct negotiation fails.

3. Agree to drastic limitation of armaments under strict international control. Any nation which refuses to fulfill these conditions and which threatens a member state with aggression will immediately be subjected to trade discrimination within the association. Behind the economic boycott will stand the power of Anglo-American naval and aerial might, and, it is hoped, the Russian army and air force.

The planners realize that if this better-world-order idea is to be successful it must include the vanquished as well as the victor nations of this war. They believe that, to obtain the co-

operation and eventually the support of the defeated Axis countries, there must be a long armistice period — three to five years — during which armies of occupation will maintain law and order in the vanquished nations. This prolonged transition from war to peace is to be a cooling-off period for the passions and hatreds on both sides.

The postwar planners hold that one of the great mistakes made by the victors in the first World War was to permit statesmen and military leaders to write the peace while they were still literally in the heat of battle. Those whose minds have been concentrated on the destruction of the enemy can hardly be expected to propose a sane peace at the moment of their triumph. The danger of revolutionary or revenge movements in the beaten nations must also pass, and their people must be convinced of the good intentions of the United Nations before the armies of occupation can be withdrawn.

The immediate objectives during the armistice period are:

1. To disarm Germany, Italy, Japan and their satellites completely.

2. To prevent revolutions in the defeated countries.

3. To arrange swift relief measures, including food and clothing, for the people of all the devastated war areas.

4. To avoid the demobilization of the armies of defeated nations until provisions have been made for their return to peaceful employment.

5. To make sure that the cessation of hostilities will not be followed by a continuation of economic warfare.

6. To assist in the establishment of trustworthy governments in the defeated countries, which will maintain law and order and agree to cooperate with the United Nations in the establishment of the better world order."

I gather from this that the United States is going to assume the leading role — hoping for the aid of the British Empire and Russia. We are going to assume the major role in dictating the peace, in feeding the world, in policing the world, in rehabilitating the world. Finally, we are going to pay the major portion of the bill. One may ask — why do we think that we should do this and if we should how can we do it? One must assume that we set ourselves up before the world as a perfect democracy and that for many years we are going to continue to be a perfect democracy. We are saying to the world that we have no selfish men in America, that all of our politicians are honest men, that all of our industrialists are honest men, that all of our labor leaders are honest men, that all of our halls of justice are filled with honest men. Our house is one of law and order of morality, of sobriety, of love and happiness among our family circle; free from fear, free from want, free from jealousies, free from the desire for power, free from economic selfishness. Our country is free from racial and religious intolerance. Now having this perfect house we are going to build similar houses all over the entire world, and, we are going to set-up a great machine, political, social, economic and military and we are going to force the world to take our architect and architecture. A great experiment as Mr. Smith says. They say that it is cheaper than war. Perhaps it is, but it is war itself. Perhaps the American people should be acquainted with what our government proposes to do and perhaps we should have something to say about it. State departments as far as my recollections are concerned are not always well informed, practical or even endowed with good horse sense.

R. K. Packard, M. D.
Chairman,
Committee on Medical Economics

BERIBERI HEART IN 4 MONTH OLD INFANT

The daily diet of the average young infant is deficient in thiamine hydrochloride or vitamin B_1 and should be supplemented with that vitamin, Henry Rascoff, M.D., Brooklyn, advises in *The Journal of the American Medical Association* for December 19 in a report of a 4 month old infant who was on a limited diet of boiled human milk for two months and subsequently developed a beriberi heart (enlarged) which diminished in size with thiamine hydrochloride treatment.

Medicine's Role in the War Effort

"It is of the utmost importance that the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, immediately has the name of any doctor who really is willing to be dislocated for service, either in industry or in over-populated areas, and who has not been declared essential to his present locality. This is necessary if the medical profession is to be able to meet these needs adequately and promptly. We urgently request that any physician over the age of 45 who wishes to participate in the war effort send in his name to the State Chairman for the Procurement and Assignment Service in his State."—Frank H. Lahey, M.D., Chairman Directing Board Procurement and Assignment Services for Physicians, Dentists and Veterinarians.

INTERNS AND RESIDENTS FOR 1943-1944

According to the Procurement and Assignment Service, Washington, D. C., the expansion of the Army and Navy in 1943 and 1944 will demand the services of such large numbers of young physicians that a critical appraisal of all positions held by interns and residents and fellows is necessary.

Interns. — Graduates of medical schools who hold commissions in the Army or the Navy will be allowed twelve months' deferment of active duty for the completion of an internship. This makes it necessary that internships begin immediately on graduation. Medical school graduates who are deferred by Selective Service may, under the Selective Service regulations, have their deferments continued through one year of internship. Medical school graduates who on account of sex, physical defects or other causes are not subject to induction or likely to be reclassified by Selective Service are not officially restricted as to the length of internships which they may serve but they too have a responsibility to make themselves available as early as possible for civilian services which contribute to the war effort.

Residents and Fellows. — Interns who have already served a year of internship must at the end of this 12 month period, be considered as residents for the duration of the war. This eliminates internships of 18 or 24 months during the present emergency. Although the Army and Navy appreciate the importance of graduate training in the various specialties of medical practice, they do not feel that they can at the present time defer calling interns to active duty in order that they may continue specialized training in civilian hospitals. Therefore, the only justification for the continuation of residencies and fellowships during the war is that they are essential for the provision of adequate medical care for the hospital patients or for the clinical training of medical students. In view of this situation, there are several principles that must be followed in the selection of residents or clinical fellows for 1943.

First, the minimum number of residencies with which each hospital can function must be determined. For 1942 the Directing Board of the Procurement and Assignment Service stated that in general this number should be less than 50 per cent of the number of residents that these hospitals had before the war. For

1943 this number must be reduced still more.

Second, having determined the minimum number of residents that are essential, these should be selected from the following groups in order:

1. Physicians who for physical or other reasons cannot qualify for service with the Army or the Navy.

2. Present interns or residents who are deferred by Selective Service. Preference in this group should be given to those who have been deferred in class IV-F and class III-A or III-B and maintain a bona fide family relationship with wife and/or children.

3. Present interns who hold commissions in the Army or Navy. No requests for deferment of individuals in this group should be made until the possibilities of filling minimum essential residencies from individuals in groups 1 and 2 have been exhausted. It is impossible at the present time to give assurance that interns who hold commissions will be deferred. The Surgeon General of the Army and the Surgeon General of the Navy have assured the Procurement and Assignment Service of all possible cooperation in meeting this situation. On the other hand, the urgent needs for medical officers in this age group and the necessity of securing the authorization of the War and Navy department to hold men with commissions in an inactive status beyond one year of internship make it imperative that hospitals make every possible effort to fill essential residencies and fellowships without depending on interns who hold commissions or those who might be subject to induction by Selective Service.

In case it becomes necessary to request deferment of active duty for any individuals in this group, such requests should be submitted to the state committee of the Procurement and Assignment Service.

Approval of these requests must further be concurred in by the chairman of the Corps Area Committee and the representatives of the hospital and medical education committees.

APPEALS PROCEDURE

The directing board of the Procurement and Assignment Service has issued the following appeals procedure for individual physicians, dentists and veterinarians, and for employers thereof, to all state chairmen:

The responsibility for the initial decision as to whether an individual physician, dentist or veterinarian is to be considered essential in his present situation or available for service elsewhere rests with the respective state committees. The local, county or district committees may serve in an advisory capacity to the state committee, but the authority to make decisions rests with the state committees.

If an individual physician, dentist or veterinarian or the institution employing him does not agree with the decision of the state chairman as to his availability for service elsewhere, the individual or his employing agency may request a reconsideration of the decision by the state committee. If the original opinion is upheld by this committee, appeal may be made to the corps area chairman and his committee. In this event the corps area chairman should request all information available from both the state committee and the person himself, and the corps area committee should appraise the situation and render a written decision to both the state chairman and the individual concerned.

If the decision of the state committee is still sustained by the corps area committee, the individual concerned or his employer has the further privilege of submitting his case to the central office of the Procurement and Assignment Service. When this is done the central office will assemble all pertinent information from the individual, his employer and the state and corps area committees concerned and present this for action to the directing board or to a special committee of the board in case a decision is necessary before the next board meeting. In such circumstances this committee shall report the case and its decision to the board at its next meeting.

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ADMIRAL McINTIRE RENOMINATED SURGEON GENERAL

The President of the United States has renominated Rear Admiral Ross T. McIntire to

be chief of the Bureau of Medicine and Surgery of the U. S. Navy. Admiral McIntire graduated from the Willamette University Medical Department, Salem, Oregon, in 1912, and has been a member of the Navy Medical Corps since 1917. He was first appointed Surgeon General of the Navy in 1938. According to the *Army and Navy Journal,* Admiral McIntire declared a few days ago, in a radio address in answer to criticism and newspaper items concerning the large number of doctors being ordered to military service, "When the Marines go into battle, our people go with them, so when I hear statements made that perhaps we have too many doctors to care for our fighting men I want you to know that this is not so. We are only adequately furnishing medical personnel so that the lives of the wounded men who may be your sons can be saved. I can assure you that there will be no waste of medical personnel."

★ ★

CIVILIAN DEFENSE

OFFICE OF CIVILIAN DEFENSE USES NEW METHOD OF ADMINISTERING MORPHINE

Because of the critical shortage of tin, the U. S. Office of Civilian Defense has been unable to procure syrettes for administration of morphine by physicians of Emergency Medical Service. To meet this serious difficulty, a new device using glass and plastic has been developed.

This device consists of a small, sealed glass ampule containing ¼ or ½ grain (0.016 to 0.032 Gm.) of morphine in solution. The solution is under sufficient pressure to eject the entire contents. A piece of transparent plastic tubing encloses the neck of the ampule and connects it to the hub of the needle. The shaft of the needle is enclosed in a small glass tube, to which is attached a stylet. At the hub of the needle within the plastic tube is a small filter.

Following is the method of using the ampule:

1. The body of the ampule is grasped in the right hand.

2. The glass tube protecting the needle is withdrawn by a twisting and pulling movement of the fingers of the left hand.

3. With the needle pointing down and the body of the ampule vertical to the skin, the needle is inserted by jabbing it under the skin.

4. When the needle is in place, and with the ampule vertical to the skin, pressure is exerted with the thumb and two fingers on the plastic tubing to break the neck of the ampule. It is important that the ampule be held vertical to the skin, in order that morphine may not be lost by improper technic.

5. The pressure within the ampule ejects the contents. The filter prevents glass splinters from clogging the needle.

6. When the ampule is empty, the needle is withdrawn and the whole device is discarded.

This ampule will be supplied in connection with the medical supplies and equipment that will be distributed to communities for equipping mobile medical teams and casualty stations organized in the Emergency Medical Service. The actual distribution of the morphine supply will be handled by the U. S. Commissioner of Narcotics and will be primarily under his control at all times. The amount of the drug being obtained is limited, so that initial distribution can be made only to those cities in the target areas that are entitled to receive other Office of Civilian Defense supplies and equipment.

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WOMEN RESERVISTS AT NAVAL MEDICAL CENTER

The Naval Medical Center at Bethesda, Md., has taken the first Women's Reserve Officers into its staff. Lieut. (j. g.) Cornelia Gaskill is enrolled in an indoctrination course at the Naval Medical Center preliminary to duty as a medical officer with the Women's Reserve. Lieutenant Gaskill, who is the wife of an army doctor, gave up a busy practice in New York to accept a commission. She was graduated from Cornell University School of Medicine in 1937. Lieuts. (j. g.) Kathryn Hyde and Dorothy Oborne have reported for duty on completion of their thirty day training course at U. S. Naval Training School, Smith College; the former is a medical illustrator and the latter is a medical technician. Miss Hyde graduated from the University of California and took postgraduate study at Johns Hopkins University. Miss Oborne, a graduate of Pembroke College at Brown University, was a medical technician with a group of New York physicians before entering the Women's Reserve.

THE NATIONAL ROSTER OF SCIENTIFIC AND SPECIALIZED PERSONNEL

Senior and graduate students of chemistry, physics, engineering and other specialized fields were urged, November 24, by the National Roster of Scientific and Specialized Personnel to register with the roster, writing to Dr. Leonard Carmichael, Washington, D. C., the director, mentioning the fields in which they have training or knowledge.

Registration with the National Roster is not to be considered application for employment, although many of those registered have received offers and 140,000 men and women have thus been referred to prospective employers, particularly to aid in war production and research. Many industries needing technicians consult the local USES offices. The National Roster is constantly used to advise selective service boards about the importance of work being done by civilian technicians of draft age.

The National Roster, which is a part of the War Manpower Commission, has listed and punch-card-indexed more than a half million names in more than sixty specialized occupations, covering everything from genetics to housing and radio broadcasting. The names filed include the most famous scientists in the country as well as the most recent college graduates in the various scientific courses.

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AIR AMBULANCE SERVICE

Speaking on the radio from Cairo, Egypt, Denis Johnstone gave an account of the air ferry ambulance service of the Royal Air Force, which he said was saving many lives. This is a shuttle service of transport and ambulance planes, which during the recent campaign flew army casualties and enemy wounded from the forward areas back to the base hospitals. They have been especially useful in cases requiring blood transfusion. These air craft carrying the wounded are unarmed and unescorted and fly by day and by night, sometimes landing along a flare path at the end of their journey like bombers coming in from a night operation. It thus becomes possible for the seriously wounded to be transported hundreds of miles within a short time to adequate medical aid and hospital facilities.

RUSSIAN WAR RELIEF

During the first year of operations of Russian War Relief, Inc., the shipments to Russia and goods being purchased reached a total value of $4,067,703.91. Edward C. Carter, president of Russian War Relief, announced on November 12 that supplies are being regularly sent to Russia in Soviet ships at no cost to Russian War Relief, which spends all its relief funds for American products and sends no money to Russia. The total of contributions to this effort to help wounded Russian soldiers and orphans and refugees in the Soviet Union is increasing each month and the supplies shipped are reaching their destination; 90.4 per cent of the supplies have been medical supplies, 6 per cent clothing, knit goods and blankets, 3.5 per cent foodstuffs and seeds, and one tenth of 1 percent miscellaneous items. The head of the Russian Red Cross, Sergei Klesnikov, and Prof. Sergei Spassokukotsky, Soviet surgeon, recently cabled their gratitude to the American public and Russian War Relief.

USE OF POOLED BLOOD PLASMA AND SERUM

In pools of a sufficient number of samples of plasma or serum obtained from donors belonging to all four blood groups the amount of substances, known as anti A and anti B agglutinins, which might cause serious reactions is reduced to such a low level that no danger can result to patients from injection into a vein of even large therapeutic (treatment) doses from such pools, William Thalhimer, M.D., New York, declares in *The Journal of the American Medical Association* for December 19. His statement is based on his own investigations as well as an analysis of data of other investigators and is in answer to several recently published opinions questioning such a procedure on the basis of the possible danger from the injection of incompatible agglutinins or incompatible A or B substances.

The widespread dissemination of tuberculosis is common knowledge, but the toll of lives taken is not always realized. In the United States alone, since 1900, a comparatively short span of life after all, more than four million have succumbed prematurely to the tubercle bacillus. Godias Drolet, in Clinical Tuberculosis, Edited by Benjamin Goldberg, M.D.

Original Articles

THE TREATMENT OF SOFT TISSUE INJURIES

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It appears to be the wish of our Government to promote and clarify the general understanding of physicians concerning the care of wounds. The conservation of manpower both at home and in the armies over-seas demands this. Hence, this review of a subject which, though familiar, is of timely interest.

Although the same principles apply whether a wound is incurred in civil life or in the field or battle, because of the fact that there are usual differences such as the extent of destruction of the tissues, the time elapsed before thorough treatment can be given, and the types and number of contaminating bacteria — the treatment may vary considerably; hence, this discussion will be divided into two parts, first, wounds incurred in civil practice and, second, war wounds.

WOUNDS IN CIVIL LIFE

Diagnosis:- This is essential in order that treatment may be correct. Has a tendon or nerve been severed, a muscle cut, a joint opened, is there an associated fracture, has there been a blood vessel injury? The history of the injury often gives valuable clues. X-rays should be used freely — a punctured wound over the tibia may actually be a serious compound fracture. The presence of radio-opaque foreign bodies will similarly be disclosed. Careful testing for nerve and tendon function should be performed. It should be remembered that there is no way, at the time of the first examination, to distinguish between nerve severance and physiological block due to pressure or contusion. One should search for the presence of associated injuries with particular reference to the skull and abdomen as such injuries may not be immediately apparent.

The presence of blood vessel injuries should be tested by the peripheral pulse and distal circulatory changes recalling that ischaemia may result from spasm, compression, or severance of a vessel. Of greatest importance, of course, is the diagnosis of the degree of shock.

Treatment:-

First Aid:-

If at the scene of accident or at the office, if the patient is going to the hospital, the first-aid treatment should be nothing more than arresting hemorrhage and the applications of sterile or clean dressings and a bandage. The implantation of one of the sulfonamides is valuable if any delay in hospital care appears inevitable.

Shock:-

Prevention and treatment come first. Operative treatment of wounds is delayed until the patient's condition improves. Hemorrhage can usually be controlled by pressure of gauze and bandage; should a tourniquet be needed, the blood pressure cuff, if available, is the best method.

Immediate Care:-

All wounds are emergencies, assuming shock is not great enough to cause any delay. All wounds are contaminated by bacteria but

Abstract of address presented at Ill. State Med. Society, Post Graduate Conference, Mt. Vernon, Illinois, Oct. 8, 1942.

not infected until the bacteria have multiplied and invaded the tissue; this usually requires 6 hours or more, hence:

"The Golden Period":-

Within the first 6 hours, the sooner the better. This period has been increased somewhat by the use of sulfanilamide. An exception to the above consists in the legitimate excuse for some delay in order to secure adequate professional and hospital care.

Soap and Water Cleansing:-

Assuming the patient is in the hospital operating room, after filling the wound with sterile gauze, the surrounding skin is shaved, grease demoved with a suitable solvent, and the skin thoroughly scrubbed with soap and water. If this scrubbing is thorough there is no need for the application of one of the antiseptic tinctures to the skin although this may be done if desired. The wound is then irrigated and thoroughly though gently scrubbed with a solution of mild soap and water using cotton or soft gauze. The surgeon's gloves are frequently washed during this procedure and frequent changes of cotton and gauze during the scrubbing removes more and more contaminated material from the wound. For the more severe type of injuries, from 20 to 30 minutes time, and many gallons of solution may be needed. After this the entire wound is irrigated with normal saline solution. This cleansing requires no antiseptics which are to be avoided because of the danger of injuring the tissues.

Debridement and Excision:-

Debridement in its true sense refers to the "surgical toilet" which includes enlarging the wound, exploring, and removing foreign bodies and blood clots. Excision refers to the partial or complete excision of the wound area. In some wounds debridement alone is sufficient, in others debridement and partial or complete excision; in war wounds complete excision is always done in cases seen early enough. One should not hesitate to extend the wound by longitudinal excisions at each end in order to better explore and expose all tissues. It is important to excise all devitalized tissue. Avoid excising skin on the face and minimize on the hands. Muscle is excised until healthy, red, bleeding, contracting muscle appears. If the nature of the wound permits, try to convert a lacerated wound into an incised wound. The instruments should be kept clean by wiping them off frequently with Azochloramid solution on the instrument table; use a sharp knife or sharp thin-bladed scissors. The wound should be kept moist with warm saline, flooding the wound with the same occasionally. Loose tissue fragments float up and can be excised. Bone fragments are kept if they have a periosteal attachment. Chisel bone ends to create a clean surface. The wound should look clean and fresh after excision, creating virtually a new wound, the exposed surface of the entire wound being trimmed away. Gentleness should be used throughout. Small hemostats should be used, grasping the bleeding points only. Sponging should be done gently with no wiping or rubbing with the gauze. If conditions are favorable, the suture of tendons and nerves is performed at this time.

Primary Closure:-

This is the ideal method and should be used when favorable factors exist such as early treatment, successful excision performed, and a favorable environment in which the wound was incurred (industrial environment is usually favorable). Such closure refers chiefly to skin closure; the skin should be approximated but never sutured under tension, interrupted sutures being used. Lateral relaxing incisions may be needed to allow this. The interior of the wound should not be closed by layers as this will cause internal tension. No buried sutures or, few at most, should be used. An occasional interrupted suture may be needed to eliminate dead spaces and for loose approximation. There are exceptions to this rule such as in the hand. In general, fascia is not sutured except where ample room exists and then a few loose interrupted sutures may be used if there has been relatively little tissue disruption.

Hemostasis:-

All bleeding points must be ligated to avoid post-operative hematomas, a potent source of delayed healing, wound irritation, and infection. Mass ligations of tissue must be avoided.

Elimination of Dead Spaces:-

This must be done to avoid pockets of serum and blood. This principle may seem inconsistent since we have just said that most wounds should not be meticulously closed in layers. Post-operative pressure dressings will accomplish this because they keep the tissues in contact. Traumatic edema yields a similar effect but we wish to prevent such edema as much as possible.

The Tourniquet:-

This may be needed, especially if tendons or nerves are to be sutured or if bleeding is copious. If so, always use a blood pressure cuff pumped up to 250 mm. of mercury, releasing it when the operation is completed so that all bleeding points may be ligated, then re-applying it, not releasing it again until the operation is finished and the dressings, bandage, and splint are applied.

Suture Material:-

The choice of suture material is important. Cat-gut is a potent source of wound reaction and infection and, if used, the smallest sizes possible are advised. There should be no large knots. Cotton (sizes 30-90) and fine stainless steel wire (size 36) are the best and this is particularly true in contaminated wounds. They are applicable to the suture of almost all types of tissue including tendons and muscles. Interrupted sutures are the rule when these materials are used. Cotton is excellent for ligating small bleeders but silk, being more elastic, is better for the larger vessels. Fine silk, of course, is used for nerve suture. In the order of least tissue reaction caused, the following ratings may be given: stainless steel wire, cotton next, then silk, and then cat-gut. Interrupted sutures of wire and cotton are also excellent for skin.

Implantation of Sulfonamides:-

Sulfanilamide is, perhaps, the most widely used. It should be applied by means of a sterile shaker or atomizer in finely divided form, no lumps of same being permissible. It yields a very high local concentration and is absorbed so slowly that the blood level remains very low. It causes very little, if any, retardation of wound healing but may cause some retardation in skin union so it should not be used on the skin edges. There have been some reports indicating increased fibrosis following its use in tendon suture. However, its bacteriostatic action appears far greater in value than any deleterious effects so far reported. After all, one of our main objects is to prevent wound infection and for this reason the sulfonamides appear indicated in the treatment of contaminated wounds. Small wounds need only a few grams whereas extensive wounds may require up to a half ounce. It should be recalled that the sulfonamides appear in joint fluid and bursal contents after being administered by mouth. If large quantities are implanted, and always when taken by mouth, one should observe carefully for toxic reactions.

Pressure:-

This deserves much emphasis and is a very important part of the treatment. Adequate pressure minimizes wound swelling due to venous stasis and hematomas. It prevents the "white bleeding" (exudation of lymph into the tissues), eliminates dead spaces, aids splinting, and suppresses excessive granulations. After the usual flat dressings, abundant gauze fluff dressings or mechanics' waste is applied, followed by an elastic bandage.

Drainage:-

This is best avoided in most instances.

Splinting:-

After the elastic bandage is partially applied, use the remainder of the bandage to incorporate the splint. If a tourniquet has been used, it is now released. Rest is essential as it reduces the danger of infection and promotes healing. Rest is an important factor in the success of the Orr Method

of treating osteomyelitis and compound fractures by mean of the clost plaster cast. Lymph flow is localized and retarded while nature forms a protective wall. Manipulating the part or changing the cast too soon causes a flare-up in temperature and other signs of systemic absorption.

Recapitulation of Steps in the Treatment of Wounds by Ideal Primary Closure:-

1. Immediate care (or within 6 hours).
2. Thorough soap and water cleansing.
3. Debridement and excision.
4. Use of cotton or stainless steel wire for suture material.
5. Accurate hemostasis.
6. Avoid deep suturing and layer-by-layer closure.
7. Implantation of sulfanilamide or similar chemical.
8. Avoid tension on soft parts and skin; use interrupted sutures.
9. Avoid drainage.
10. Pressure dressings.
11. Splinting.

Primary Skin Grafting:-

Where the loss of skin exists or attempted closure causes too much tension, the area should be covered by a graft. The split-skin graft (Blair) is usually applicable. The operation proceeds as above up to the time the graft is applied, the graft being carefully sewed in place with fine silk. Sulfanilamide powder is dusted on before the graft is applied. Fine-meshed bandage-grade gauze impregnated with 5% xeroform or 5% sulfathiazole in petrolatum is applied in a single layer over the graft. Then a pressure dressing and splint as described above are applied. Whole-thickness grafts are used where deeper areas are exposed such as over tendons and joints. Measure the size carefully and cut the exact pattern, trim away all the subcutaneous fat, and suture in place as described above. Skin flaps, etc., may be needed for more extensive defects. The sliding of adjacent tissues over the wound by under-cutting each side may be done, followed by grafting the defect on each side.

After-care Following Primary Closure:-

Cross infections in hospitals from dust, respiratory tracts of physicians, nurses, internes, and bed linens should be avoided. Dressings should be changed by the use of instruments and operating room masks should be worn. If the wound is correctly dressed and splinted it should be left alone for 10 to 15 days. Temperature and pulse should be carefully watched. Sulfonamides may be given by mouth. Blood transfusions may be needed and medication for secondary anemia. There should be a high vitamin administration, especially a high ration of Vitamin "C". A high protein diet should be given and intravenous plasma for hypoproteinemia may be indicated.

Secondary Closure:-

When conditions are somewhat unfavorable, skin sutures may be inserted at the time of the operation but should be left untied and the wound observed for 3 or 4 days. If everything is favorable at that time, the sutures may be loosely tied. Later partial closure is sometimes done in 10 to 14 days. Wound smears and cultures furnish a knowledge of the bacterial flora and are of definite help in ascertaining the safe time for secondary closure.

Unfavorable Cases Which Cannot Be Closed:-

The principle of avoiding edema is fundamental. In addition to that resulting from trauma and infection, edema definitely results from the hiatus caused by the wound due to the lack of tissue support. Hence the supporting of the wound and immobilization to give complete rest.

Packing Wounds:-

Plain vaseline gauze is used or vaseline gauze with 5% sulfanilamide or cod liver oil. This gives the tissue support and replaces the space where the tissue was lost, thus eliminating dead spaces. However, immobilization is not perfect when the wound is packed.

Soft Pressure Dressings, Elastic Bandage, and Splinting:-

These principles apply as previously emphasized.

Closed Plaster Cast Method:-

The closed plaster cast is applied over the skin, only being padded over the bony prominences, no dressing being applied over the wound. Absolute pre-requisites are com-

plete excision of the wound within 6 to 8 hours and certainty as to an adequate blood-supply. Elevation is very helpful.

The Carrel-Dakin Method:-

Where excision is impractical or imperfect, the Carrel-Dakin method gives free drainage and its chief value is that infection rarely results. However, there is no tissue support and usually poor immobilization. Azochloramid solution is very useful in this method.

Antitoxin:-

1500 to 3000 units of tetanus antitoxin are given, together with mixed gas—bacillus antitoxin when indicated. In extensive injuries a single therapeutic dose of gas-bacillus antitoxin is better than the usual prophylactic dose.

Local Applications:-

One of the sulfonamides is usually indicated. The powder may be implanted directly in the wound or it may be incorporated in vaseline. A mixture of 10% sulfanilamide in urea has been advocated by some; others advocate cod liver oil, allantoin, urea, tissue extracts, antivirus, sulfydryl, etc. However, with the exception of the sulmonamides, these special preparations and medicaments are relatively unimportant as compared to the fundamental principles enumerated above.

WAR WOUNDS

In war, explosive shell fragments and in civilian bombings, secondary missiles of brick, glass, and wood, cause much tissue destruction. It is this tissue mutilation and necrosis that is the important factor in distinguishing war wounds from the usual type of wounds seen in civil practice.

As to the time interval before operation, under 6 hours is generally preferred but it may be reasonably safe at times up to 12 hours. The type of operation varies according to the time elapsed. Some delay is definitely warranted in order to get the patients transferred to trained personnel in a well-equipped hospital. The safe period has been somewhat increased by the use of the sulfonamides. Some advise the excision of all war wounds under 6 hours. Those over 12 hours are handled differently. In the early cases, excision is the rule, tissues being sacrificed freely during the process. Wounds over 12 hours old are usually infected so that in most wounds between 12 and 18 hours old, operation is done for only a definite purpose and the following rules are advocated: (1) operation limited in scope and gentle; (2) incision may be needed for exploration and drainage; (3) remove foreign bodies, clots, and devitalized tissue without disturbing the wall of the wound (limited debridement); (4) hemostasis; (5) remove damaged muscle up to bleeding, contractile portion; (6) free drainage; (7) irrigate with mild antiseptic such as hydrogen peroxide; (8) no tubes are used for drainage. The wound is packed lightly with vaseline strips or the Carrel-Dakin technic is used; (9) splinting. The above principles are advocated by Bailey.

Tenderness, pain, tension, and increasing edema indicate trouble. Thin, foul, sanguinous discharge and spreading mottled skin bronzing are indicative of gas bacillus infection. The temperature is less reliable than increases in the pulse rate and in the amount of pain.

Since most war wounds are left open, the primary suture of tendons and nerves is not advocated, although this is done if primary closure is attempted and the patient is seen within 6 hours. Some surgeons in the war zone practice primary closure providing complete excision is done early, there is no skin tension, no buried sutures are used, and all dead spaces are obliterated. However, most surgeons are against primary closure in war, one reason being that the subsequent course can seldom be followed by the original operator. Most wounds, then, are left open in war surgery.

Obviously, wounds of the brain, joints, pleura, and abdomen are exceptions. In these wounds at least the serous layer is closed, the more external portions being left open in some instances. Packing of the wounds is advocated by many and infrequent dressings are generally agreed upon.

The closed plaster cast method has many advocates. It gives complete rest, eliminates frequent dressings, gives tissue support, controls edema, and lessens the lymph flow. Infection is spread by the lymphatics hence, the cast keeps the infection localized by decreasing the flow of lymph. This method has greatly reduced

the incidence of gas gangrene. It saves time and materials, the patients are easy to transport, and they are comfortable and contented. Very definite pre-requisites, however, exist, including complete early excision of the wound and an intact blood supply, together with a surgeon who has had ample experience with the method. There is no padding except over bony prominences and the cast is applied directly to the skin with no dressings on the wound. It is changed infrequently at about 3 to 6 week intervals; no windows are cut in the cast; it is not removed simply because of some soreness, some fever, or enlarged glands. It is removed only if apathy, high pulse, severe pain, and edema of the distal part of the extremity ensues. These symptoms may be due purely to inadequate drainage and after drainage is instituted and the wound is re-packed, the cast may be re-applied.

The packing of the wound may consist of plain vaseline, one of the sulfonamides incorporated in vaseline, or any one of the various other non-adherent preparations.

It is the correct fundamental principles that are of the chief importance in the treatment of wounds, the medicaments and substances being of lesser value. It is interesting to note that the three substances which appear to be of the greatest value in the treatment of war wounds are vaseline, plaster, and the sulfonamides — and of these three, two of them are among the simplest and oldest of preparations.

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★ BUY WAR BONDS ★

MANAGEMENT OF BURNS

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The medication and ways of treating burns are numerous and varied, with champions for every treatment. I consider this a healthy atmosphere, as it shows that the last word in the treatment of burns has not been reached, but out of this conflict comes improvement in technique and a reduction in the mortality rate.

It is impossible in the time allotted to go much into detail, but I will attempt to give you what I consider the important factors. I do not come before you with a new treatment, but will give you my experience and that of others in regard to the present care of burns. In the last few years I have tried to keep myself posted upon all new information and ways of treatment, and sift out the things that would help me in the care of my own patients.

For all practical purposes I like to classify burns into three degrees, according to the depth. (Boyers).

First degree, which consists of redness.
Second degree as that forming blisters,—and
Third degree as that which extends below the skin and produces granulation.

Dupuytren gives six degrees in his classification which extends down to the bone, but in the early stage it is difficult to determine the exact depth.

First degree burns can be treated by local applications. Among this type is moderate sunburns, and in sunburns I find ice pack or cold applications to the area a very satisfactory means of removing the heat.

Of course, the thing we are all interested in is extensive second and third degree burns, and in my opinion most of these cases should be cared for in a hospital and a routine should be established so that everyone involved will know what to do. In other words, develop team work and avoid last minute confusion.

I am convinced that there is a psychical factor involved in burns that we often do not recognize, as some cases react systemically far beyond that expected from the burn. This in-

Address delivered at Ill. State Medical Society Post Graduate Conference, Mt. Vernon, Illinois, Oct. 8, 1942.

volves the horrors of the accident, plus sudden exertions performed at that time and as a result may produce sudden collapse.

Statistics show a decrease in mortality rate, especially at the time tannic acid was introduced by Davidson, and others by various treatments show still more reduction in their smaller groups.

If the doctors will only realize the importance of proper early treatment, many lives will be saved. The life or death of a great many cases are decided in the first 24 to 48 hours. So in treating your burn cases bear this in mind.

The treatment of burns can be classified into two parts — the general treatment and the local treatment.

Under the general treatment which is probably the most important we have shock, which is both primary and secondary, but for general purposes they need not be differentiated, as it is difficult to tell where one ends and where the other begins, and the only difference between burn shock and shock from other types of trauma is, in the former the degree of hemoconcentration is much greater.

Various theories have been advanced for burn shock. Among these we find listed toxic, nervous, septic and fluid loss theories. They may all be factors, but working at different times, and in the following order, we have primary shock, secondary shock, acute toxemia and septic toxemia, but they seem to overlap. Harkins of Detroit explains his theory as to what takes place. He claims that in the primary condition the local thermal trauma causes local capillary injury, resulting in regional loss of plasma like fluid (a weeping stage). Later due to tissue metabolities set loose in the damaged areas there is a generalized loss of plasma like fluid from capillies remote from the burn areas. (This fluid loss may equal several quarts). It has been estimated that a burn of one-sixth of the body area can lose 70% of the body fluid in 24 hours.

Then secondary, there is a reduction of blood volume and cardiac output, resulting in hemoconcentration, and it is important to correct this condition before irreparable anoxia tissue damage takes place and before irreversible generalized capillary permeability occurs.

The critical phase takes place after 18 to 24 hours, but the trouble starts from the time of the burns and gradually builds up.

There are three theories that have been advanced as to what takes place.

First, we have the physical theory, supported by Underhill, Blalock and Harkins, as given above, which sounds quite logical.

Second, is the bacterial theory supported by Aldrich, who found beta hemolytic streptococci in the blood and burn area of most cases.

And third, is the clinical theory which was supported by Davidson who held that a specific toxin formed in burn areas and absorbed into the circulating blood, produced toxemia and collapse. For several years I assumed this last theory to be correct. In our tannic acid treatment we were warned and we were very careful not to use moist applications on the burned areas after the tannic acid crust was formed, due to fear that if this tissue was softened this toxic material would be liberated and get into the blood, producing dangerous toxemia.

The supportive measures in burn treatment consist of rest, quiet, elevation of the bed, warmth and sedatives, and morphine, in my opinion, is the best drug to use. (But these things are not getting to the source of the trouble.)

In severe cases oxygen is considered an important factor. The amount of oxygen depends upon the severity of the burn. Some knowledge of the amount of oxygen obtained by various methods is good to know and the following chart is a guide.

Normal breathing or alveolar oxygen is about 15%.
With nasal catheter 30%.
With oxygen tent (usual) 45%.
With oxygen tent (extreme) 60% — and
With B. L B mask about 90%.

Using this table you can estimate the amount of oxygen your patient is getting and the control of anoxia is important.

Adrenal Cortex, which is more or less in the experimental stage, is considered by some to be valuable in preventing fluid loss in severe cases of burns.

I consider the most important elements in the treatment of burn shock is blood plasma accompanied with other fluids.

Due to the loss of large amounts of fluid through the burn area the protein and chloride depletion occurs.

Usually about 1000 c.c. of Isotonic solution of sodium chloride is considered about enough per day, although some give 3 or 4000 c.c. per day, but this is apt to produce a water logged condition and I recommend caution and do not overdo a good thing.

Dextrose should be given in large amounts to protect the liver, but most should be given by mouth if possible.

Plasma, the real important factor, should be given according to the need, but to assist the doctor in estimating the amount needed, various methods have been worked out, some of which are quite complicated and I will only give those I consider practical for ordinary use.

One where laboratory facilities are not available and which is satisfactory and credited, I believe, to Berkow, is as follows: The dose of plasma may be calculated according to the extent of the body surface involved and that is, 50 c. c. of plasma should be given for every per cent of the body's surface affected by a deep (blistering) burn. In other words, an individual with 20% of surface burned should receive about 50 times 20, or 1000 c. c.

Another easy method where laboratory facilities are available and recommended by Harkins, is to administer 100 c. c. of plasma for every point the hematocrit reading exceeds the normal of 45. Example: If the hematocrit reading is 58 — 13x100 c. c. would equal 1300 c. c., which would be the total amount of plasma required.

Some recommend the pricking of the finger and note the rate of bleeding, but this is very inaccurate.

If seen late, restlessness, rapid pulse, thirst are all indication for prompt administration of plasma.

Of course, this plasma should not be given all at once. Berkow recommends one-third the first two hours, one-third the next four hours and one-third the next six hours. While Lee, Elkenton and Wolff recommend small plasma transfusions at 6—15 and 30 hour periods, and a large transfusion of 900 c. c. at the fortieth hour period, when they consider the unbalanced permeability has been adjusted and the body is ready to maintain the fluid. The rule they follow is to give enough plasma to keep the hematocrit value between 50 and 55% until the capillaries have returned to their normal state of permeability, and then enough plasma given to restore the plasmal volume to normal.

The treatment of toxemia seems to be related to a disturbance in hepatic function, which is usually accompanied by jaundice with central necrosis of the liver. Many claim this condition only develops in tannic acid treated cases, although Wilson and Stewart in Edenburg have injected burned tissue in healthy animals and found similar changes in liver at death, but this is not found by others in their experiments, and they claim Wilson's cases all had general anesthesia which may have been a factor. Those who claim this toxemia only occurs in tannic acid treated cases, use this as their objection to this method of treatment.

Next is the treatment of sepsis and this by careful and aseptic local treatment can be prevented in a great many cases, but where it occurs the sulfonamides offer the best means of control.

We now come to the local treatment and here is where we have the most disagreement among doctors as to what is the best method to use, which means to me that we have not reached the last word in regards to this matter. Most all have their good and bad points, and as far as time will allow I will give the high points in the most promising local treatments. There is a list of over 75 different materials recommended, but for my own satisfaction I have divided the types as follows, although there may be some overlapping.

(1) Ointments in general, many kinds.
(2) Liquids in general, etc.
(3) Paraffine and heavy petrolatum.
(4) Tannic acid.
(5) Pressure bandage.
(6) Dye, the important ones being Gentian Violet and tripple dye. (Dymixal).
(7) Sulfadiazine.

Tannic acid which is now being attacked by many, is probably the most used at this time. Since 1927 until the last two or three years we used it exclusively for bad burns and had been very well pleased with the results. Now

with our present technique we are getting better results. I want to emphasize the importance of proper care and asepsis in handling burn cases. In big explosions where everyone is excited and 40 or 50 cases come in all at the same time, you have a job on your hands controlling the situation and determining the cases that need hospital care. In our refineries the bad cases are immediately stripped of their clothing, placed in sterile sheet and with plenty of blankets to avoid chilling they are rushed to a near by hospital where treatment is started immediately. The hospital staff must be acquainted with your method of treatment, as everyone is needed when several cases are involved. Each case needs a nurse who can start the tannic acid spray as soon as the dead skin and skin over the blistered areas has been removed. Where oil and grease is present we use a product developed in our own company known as Hexane, which has a boiling point between 97-150°, for removal of same. We have not seen necessary on cases we get right away to scrub the burns with soap and water, but have treated them as uncontaminated wounds and start the spraying of 5% tannic acid directly on the burned area. Then after 15 or 20 minutes of tannic acid spraying, a swab saturated with a 10% silver nitrate solution is systematically brushed across the burned area, as you would paint an object, and immediately a dark tanned coating develops. As soon as this is finished spray treatment is over and from then on only general treatment is necessary through the trying next few days.

All attendants wear masks and the surgeon and his assistants use sterile instruments, gloves and gowns and we avoid external contamination as far as possible.

We have not been troubled with infections among our cases and have had only one case to die with jaundice and central necrosis of the liver. In this case on autopsy there was no infection present in the tanned area and healing was taking place when the patient died on the seventh day. The case was a steam burn and the patient was in a very excitable state from the very first. The burned area was not unduly large, but in spite of all treatment this case from the third day on got worse and died.

Recently we have added the sulfonamides systemically as a prophylaxis for infection. The silver nitrate produces a thinner and more flexible coating than the use of tannic acid alone. By this method the local treatment is over in minutes and the loss of serum through oozing has been stopped. The patient is kept under a canopy which is heated by light bulbs (blue best) and at a temperature not to exceed 90°. Drafts should be avoided, as burn cases seem to be sensitive to air change and chill quite easily.

We do not use this tannic acid on the face or where the hands are completely burned, due to the fact that same does not permit swelling and restriction of the circulation may occur.

I have a feeling doctors who get street and home burned cases and are delayed in getting the patients under treatment, must give more consideration from the infected angle, as contamination is more apt to occur, and the thorough cleansing with soap and water as advocated by Allen and Koch would be more advisable. In our cases we give morphine immediately and carry the general treatment along with the local care as same is indicated.

Another method we are now interested in and trying is the sulfadiazine treatment developed by Pickrell at Johns Hopkins and a brief summary of this method is as follows:

The solution consists of 3.5% sulfadiazine in an 8% acqueous solution of triethanolamine. The solution is sprayed on with a hand atomizer immediately after removing blebs or loose tissue which might be present.

The solution is sprayed on the burned area every hour the first day, every two hours the second day, and every three hours the third day and every four hours the fourth day. A thin, transparent eschar will have formed by this time and further spraying is not essential.

The solution seems to be somewhat anesthetic, as patients appear more comfortable after the first spray.

The usual measures of combatting shock and dehydration must be followed.

After about ten days the edges of the eschar begin to loosen and to separate from the intact epithelium beneath it. At this time compresses of the solution can be applied; sterile mineral oil sprays followed by normal

saline compresses may allow the eschar to be removed in large sheets in some instances.

In third degree burns the eschar is allowed to remain for at least two weeks.

The sulfadiazine solution has a pH of about 9. They claim it does not injure skin, mucous membranes or granulating surfaces, and can be used in and around the eyes safely.

Blood levels of the sulfadiazine should be determined daily. The maximum level is reached about the second day, but by the fifth day levels decrease to 1-2 mgms.%.

This method of local treatment, of course, involves more attention during the first few days compared to that of tannic acid.

Another treatment worth reviewing, which is an excellent method if the proper hospital facilities are obtainable, is the pressure bandage method advocated by. Allen and Koch. I feel this method requires much time and preparedness, and it would be difficult to handle a large group of burns at one time as a specially prepared room is necessary, but after the case is once finished it requires no further local treatment for several days. They go into detail in regards to asepsis and technique in making the wound surgically clean, which should receive no criticism. They scrub and clean the wound with white soap and water for several minutes, using a large pad of cotton as a wash cloth and then irrigate liberally with normal salt solution until they consider the wound surgically clean, after which they apply layers of vaseline gauze and over which is placed flat dry gauze, then fluff gauze, on top of which is placed sterile sponges or machinist wastes, and a pressure bandage is applied. Splints and cast are used where necessary and the patient is put to bed and the bandages are not changed for 12 to 14 days, at which time the second degree burns are usually healed. I have seen these cases at Cook County and the patients appear quite comfortable. By this method they have decreased their mortality rate from 1939 of 5.8% to 1941 of 2.7%, whereas their mortality rate in 1939 with tannic acid was 7.3.

Another method which is not new but is still used by Carnegie Steel with great favor is paraffine sprayed on the wounds. I used this treatment back in 1921-1927 and at that time we considered it the most satisfactory way of treating burns until the tannic acid method came out. An objection I have to it is the time consuming application of the paraffine and the daily changing of dressings. The Steel company has developed a very good technique with this treatment and I can see the advantage of its use to them. Their burns are often very deep due to hot molten metal which may penetrate down to and into the bone, producing much sloughing.

Another method developed by Aldrich in the east, which has met favor in his clinic, is the tripple dye called by the McNeil Laboratories as Dymixal. It is sprayed on and is supposed to combat both the gram negative and gram positive organisms. I have not seen any cases treated this way, although I am acquainted with Gentian Violet treatment of spraying burns, and this method is the same procedure.

The last one I will mention is the Foille treatment. This is apparently popular in the south, especially in Texas. Foille is a stabilized, viscid water-in-oil emulsion in a base of corn oil. It contains:

Benzocaine, an analgesic
Oxyquinoline, a mild antiseptic
Calcium soaps, which maintain the emulsion and produce a soft, protective precipitate with body exudates.

This solution is first applied by spray or soft camels hair brush, followed by a preliminary dressing of two or three thicknesses of sterile Foille saturated gauze held in place by clean bandage and kept moist with Foille under a heat cradle for 48-72 hours. Then the crust, etc. is soaked off in a tub of warm tap water. Thereafter the lesions are kept covered with Foille but without gauze bandaging and warm baths are given every day or two. Then in the epithealization stage some use pectin jelly or cod liver oil. This again is a method which requires considerable time for local treatment.

In all deep burn cases after healing has begun and the deep burns have sloughed or the coated areas are removed, we may have areas that are denude of any skin, and the only way of getting skin across these areas is for the skin to grow in from the edges or to skin graft. I am afraid it is the tendency of a great many doctors to put off skin grafting until the last resort, but I

want to stress the importance of skin grafting early to close the open wound as soon as possible to stop loss of fluid and to prevent thick scar tissue from developing. It also prevents contractures which are disturbing factors in burns. Dr. Padget of Kansas City has developed a Dermatone which is quite satisfactory for obtaining large flaps of skin when needed and split skin grafts are used for most early grafting. This instrument will cut any thickness desired. Pinch or thiersch grafts may be advisable in infected areas, or when flaps cannot be used.

Literature at times speak of airman's burns. These are burns that develop when the aviator throws up his hands to protect his face in case of an explosion and gets his hands and face both severely burned. I understand the English treat these cases with saline baths twice daily and saline pack the rest of the time.

In phosphorus burns the phosphorus is picked out under water and then washed with mild sodium bicarbonate solution. After this a 1 or 2% copper sulphate and boric acid solution is used, followed by saline dressings and no oil or grease applications are advised.

In regards to face and eye burns, Chruthird and Mellons treat these areas with a sulphur solution known as hydrosulphosol, both in solution and in ointment form.

For the skin they spray one part hydrosulphosol with one part distilled water every 15 minutes for the first six hours and less treatment thereafter until healed.

In eyes they use 4 c.c. to 1 ounce of distilled water as drops followed by wet compresses over them. (H. D. Bliss, 1217 Broadway, New York. Price $16.00 per dozen of 1 ounce.)

They claim by this treatment: Relief of pain, flexible eschar which separates on healing, minimum scarring and contracture, prevents infection, lacks toxicity, ease of application and rapid healing.

I hope you realize the magnitude of this subject and I hope I have not been too brief in some ways, or too long in others. This is an important subject and the present war brings out its seriousness. I understand 60% of the injured cases at Pearl Harbor were burns. Therefore doctors who enter military service can expect a great deal of experience with burns and as a result of this we can expect further improvement in the treatment.

In closing I want to emphasize the importance in the general treatment of burns. Especially the value of blood plasma and the chloride and glucose balance. Although local treatment is valuable I, at this time, cannot state which method you should use. They all have their merits but until a better agreement on this matter can be reached I would advise you to use the method that you can most successfully handle, but never be completely satisfied with your treatment as long as fatalities occur.

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MINIMUM FRACTURE REQUIREMENTS

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It is often said that the minimum requirements to be a fracture specialist is to have a strong back and a weak mind. While this is not entirely true, I believe that the strong back is very essential, because of the necessity for traction in all fractures. In a more serious vein, one must be equipped to apply plaster, to apply splints, and have the necessary paraphernalia including the Thomas Splint, Balkan Frames, weights, and so forth. There is no question that the ideal and individual splint is the plaster of paris cast. All other splints are not individual as they are supposed to be universal splints, namely to fit all patients under all circumstances and conditions. This, as we all know, is a fallacy, and the only splint that really immobilizes adequately is the plaster of paris splint made for the individual. In the state of Illinois x-ray examinations are considered common practice. Therefore, it is essential that an x-ray be taken of any member where there is swelling, discolora-

Presented at Illinois State Medical Society Post-Graduate Conferences, Mount Vernon, October 8, and Peoria, October 22, 1942.

tion, with or without deformity, because the x-ray can be of inestimable value both for negative and positive determinations.

There are a few basic principals which we must all adhere to in the minimum requirements for fracture treatments. First one must always approximate the distal to the proximal fragment. The distal is the moveable part and can be placed opposite the proximal in most instances. Second, one must always consider the normal weight bearing line, that is, from the anterior superior spine of the ilium through the middle of the patella and between the first and second toes. It is essential to maintain this weight bearing line in order to have correct weight bearing and function. Third, never permit posterior or medial displacement, both of these deformities are crippling and disabling. Fourth, in fractures of the humerus, the carrying angle is essential, it should always be maintained. Fifth, never try to hold a fracture in the correct position by pressure, because of the danger of soft tissue necrosis, and of delayed or non-union of the underlying bone, as the pressure applied will cause ischemia of the soft tissues, thus increasing the chance of gangrene of the soft parts or delayed union of the fracture. Sixth, as a general rule one should keep in mind that traction is far more important than manipulation, and that many of our complications encountered in fractures are as a result of manipulation, and not of the accident itself. Seventh, we should employ moleskin adhesive traction, plaster, or skeletal traction.

Now, there are a few methods of treatment that apply to all fractures of the upper extremities with a few exceptions. As a general rule, we may say that all fractures of the humerus with the exception of, A — impacted fractures of the neck of the humerus; B — fractures without displacement of the humerus; C — or supracondyllar fractures, should all be placed in extension with the arm in supination. The arm is placed in supination for three reasons; first, this is the anatomical position; second, maintains the normal carrying angle; third, the most common nerve injured with a fractured humerus is the musculospiral nerve. Fractures of the supracondyllar area including the forearm, wrist, and hand are immobilized in a plaster of paris cast. The forearm can be conveniently divided into three parts, for fractures of the upper third, the forearm should be placed in supination and right angle flexion with the cast extending from the metacarpo-phalangeal junction to the mid arm. For fractures in the middle third, they can best be treated by mid pronation and supination and right angle flexion at the elbow. In fractures of the lower third, pronation of the forearm. If traction is necessary on the forearm, adhesive traction is not efficient as the skin area is not sufficient. Therefore, skeletal traction is absolutely indicated. Adhesive traction means moleskin adhesive traction. The ordinary adhesive tape will slip and tear, also excoriate the skin, and it is not advisable for use in traction, while the heavy moleskin will hold and will not tear or pull off. When moleskin is applied, the member to which it is going to be applied should be washed with soap, water, alcohol and ether, the member should not be shaved because the hair leaves a breathing space between the moleskin and the skin, and excoriations of the skin are infrequent.

Fractures involving the Lower Extremities—All fractures of the femur extending from the neck to the Supracondyllar area should be placed in traction with moleskin adhesive tape, and as a caution, when traction is applied the moleskin should never be crissed crossed or circular, it should be placed laterally on the leg, and secured by means of an elastic bandage. Skin traction on the fractured femur will reduce the shock, reduce the muscle spasm, and reduce the fracture if sufficient weight is applied. It is important to place the maximum amount of weight on the fractured femur early then the moleskin has its maximum adhesive qualities, and the skin is in good condition. In other words, instead of placing five or ten pounds on the fractured femur and gradually increasing it until finally you have forty to fifty pounds, at which time the skin may become excoriated, the moleskin may slip, and the fracture will not be pulled down, it is much better to place the maximum amount of weight on first and then gradually reduce it.

Fractures of the Leg—All fractures of the lower leg including the tibia, ankle, and foot are reduced and immobilized in plaster of paris cast, being careful to maintain the normal weight bearing line. It is advisable where traction or

manipulation is necessary to reduce the fracture that a posterior mold cast be applied. This plaster must be very wet and soft (sloppy soaking wet) in order to conform to all of the irregularities of the leg. The cast should be bandaged firmly and just as soon as the plaster is hard, the tight bandage removed and the anterior portion of the leg washed, powdered, and a loose bandage applied. Now, if traction is necessary on the lower leg, again the skin area for the traction is deficient, so that skeletal traction is indicated. The indications for skeletal traction are five, and every time we insert skeletal traction, we comply with one of the five indications. First, compound fractures; Second, comminuted fractures; Third, skin excoriations, blebs, bruises, lacerations and so forth; Fourth, in circulatory embarrassment, gun shot wounds, ruptured blood vessels, and so forth, where superficial compression is to be avoided. Fifth, in place of surgery, that is, skull fracture, chest wounds, abdominal lesions, etc., in other words, anything that would be contra-indication to surgery.

We all recognize the fact that skeletal traction is by far the most efficient form of traction, that we can employ, but there are some special rules for consideration in employing skeletal traction. Namely, one — skeletal traction should not be inserted within 6" of a simple fracture or we will have a compound fracture. This is true except where a joint intervenes and voids the rule. Second, distraction frequently causes delayed or non-union by pulling the bone surfaces apart. Third, pes cavus, or contraction of the plantar fascia should be avoided. Fourth, no dressings are applied around the pins or wires or hooks, etc., as we believe that dressings encourage infections and drainage. The various sites for the insertion of skeletal traction in the leg are: The site of election is the os calcis, the pin is inserted from the medial side to the lateral side, inserting the pin away from the posterior tibial vessels. It is better to pound or drive the pin into position than to drill it with either a hand or a bit drill as both are likely to cause larger holes than the diameter of the pin resulting in a slipping of the os calcis on the pin. Kirschner wires or small Steinman pins are inserted by drilling into the tibial tubercle. We never insert skeletal traction in the supracondyllar area because of the proximity of the knee joint. A large screw is used for skeletal traction through the greater trochanter into the neck and head of the femur for acetabular fractures, where the head is pushed through resulting in central a dislocation or perforating fracture.

Site for Skeletal traction of the Upper Extremities—The Kirschner wire is placed through the metacarpal heads, the site of insertion about one inch proximal to the heads of the metacarpals. A Kirschner wire through the ulna into the radius for traction on the forearm and arm. Here it is important to insert the wire from the ulna to the radius so as not to miss the ulna. A very important point for consideration is the fact that the fracture should be placed in the correct position before the Kirschner wire is inserted, and that the Kirschner wire acts solely as a means of immobilization and not a reducing agent, because once the wire is inserted through the lower end of the ulna and radius, it immediately locks these two bones and prevents rotation. So that, it is important to reduce the fracture first, and then to immobilize it by means of the Kirschner wire. For skeletal traction in the elbow, our choice is a hook that can be bought at any hardware store very reasonably. This hook is inserted into the ulna about 1½" distally from the olecranon, after a drill hole has been made, the diameter of which was slightly smaller than the diameter of the threads of the screw, traction is then applied in this area with moleskin on the forearm for flexion or extension.

Pelvic Fractures—This one fracture has been grossly mishandled and over-treated. About 65% of fractures of the pelvis can be treated by rest in bed, with a board under the pelvis. All that is necessary is to have a firm support posteriorly. If compression is required, a sling can be employed. This sling should have a seat that can be dropped rather than to pull the sling up or push the sling down for toilet purposes. Lastly, for malgaigne fractures or upward displacement of the entire side of the pelvis, straight leg adhesive traction should be employed.

For many years the Taylor spine brace has been used for compression fractures of the vertebrae. When this Taylor brace is applied, lateral motion is possible, forward bending is also

possible by relaxation of the slings under the arm. This type of a splint or support does not fulfill the basic requirements for immobilization of the back. They are immobilization of the sternal notch and symphysis pubes, and the Taylor spine brace does not fulfill these requirements, it does not accurately and adequately immobilize the back. Therefore, I suggest a brace that will immobilize from the sternal notch to the symphysis pubes to prevent forward flexion, and a chair back brace to prevent lateral rotation or motion, thus eliminating the deformity that can and frequently occurs after an excellent reduction. The above summary of the treatment of fractures just touches the surface or high spots in the treatment of fractures. It is not meant to be complete, but simply illustrates some of the minimum requirements that we should adhere to for the correct treatment of fractures.

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PREVENTIVE THERAPY IN RECURRENT URINARY LITHIASIS

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The rate of recurrence of renal and ureteral calculi has been found to be from ten to twenty per cent, or more, figures which are sufficiently high to lend interest to preventive therapy against recurrence.

At the outset it must be stated that the fundamental cause of urinary calculus formation is unknown and that probably, mainly because of this, the complete prevention of urinary calculi is impossible. The cause of some urinary calculi, such as bladder calculi associated with prostatic obstruction or calculi occurring in bladder diverticula, is quite obvious. However, the commonly encountered calcareous renal or ureteral calculus, when seen in its earliest stages is usually not associated with any clinically demonstrable abnormality of the urinary tract. But many conditions favoring urinary stone formation are known and by the elimination of these in patients who have had urinary calculi the rate of recurrence of these stones can be materially reduced.

Presented before the Section on Surgery, Illinois State Medical Society, Springfield, May 20, 1942.

Probably the first opportunity in which a prophylactic measure against recurrence can be practiced is during removal of the primary stone. It consists in making scrupulously certain that no fragment is left remaining in the urinary tract. It is exceedingly easy for instance in the case of a branched renal calculus to leave a fragment in a calix. Such a fragment, if left to remain, furnishes a ready nucleus for the development of another calculus. Making a roentgenologic examination of the kidney at the time of operation is a valuable aid in helping rid the kidney completely of a stone. With the kidney elevated out of the wound, it is usually not difficult to make such an examination without unduly prolonging the operation. Thus it is possible to make immediate further attempts at removal of any remaining fragments which might be disclosed. In the case of a kidney or ureteral stone, where the removed stone does not correspond in shape and size to the shadow of the stone on the preoperative roentgenogram, or where fragmentation of the stone has occurred in its removal, a thorough postoperative roentgenologic check should be made. Only by doing this is it possible to be certain that a future calculus, should it appear, is a true recurrence and not the result of a fragment of a former calculus upon which a stone has grown.

Two conditions affecting the urinary tract, which have been accorded much importance as causative factors in urinary lithiasis, are stasis and infection. In some quarters they are considered the all-important causes of all urinary stone formation. Braasch[1] from a study of 576 cases of chronic pyelonephritis, found that calculi occurred in twenty-eight cases, an incidence of five per cent. In those cases of urinary infection in which stones develop, one or more factors favoring stone formation must exist, which are absent in those cases in which stones do not develop. The effect of infection is to augment the action of these other factors. Patients who have developed stones have revealed the existence in them of these factors, and, as is common knowledge, when a urinary infection continues after the removal of a stone, recurrence of a stone is very likely. In considering the relationship of infection to calculus formation it is, therefore, important to distinguish between primary and recurrent calculi.

As a cause of primary stone, infection is a factor of some importance, whereas as a cause of recurrent stone it is a factor of great importance.

As evidence of a cure of the infection it is not sufficient to eliminate any existing pyuria. The practice of culturing the urine, which is being employed clinically with increasing frequency, has revealed the frequent presence of bacteria in the urinary tract even though no pyuria exists. As a test of cure of an infection after removal of a urinary calculus it is, therefore, necessary to obtain bacteriologic-negative cultures.

Although it is imperative to eradicate, if possible, every infection regardless of the nature of the offending organism, it is especially important to do so if the organism produces ammonia and thereby makes the urine alkaline. Among the organisms which have this property, B. proteus is probably the most dreaded invader following operative procedures on the urinary tract. It produces a strongly alkaline urine, has a very strong tendency to cause a recurrence of a stone, and which is probably its worst property, it is usually difficult if not at times impossible to eradicate even with the newer urinary antiseptics.

The importance of focal infection as a causative factor in the formation of urinary calculi is difficult to evaluate. The striking experimental results of Rosenow and Meisser[2] demand that it be considered seriously as such. Their method has been one of the few in which urinary calculi have been produced experimentally without at the same time causing severe abnormal physiologic states in the animal. By devitalizing teeth in dogs and implanting in the pulp canals organisms obtained from the urine and from foci of infection of patients who harbored renal calculi, these investigators were able to produce renal calculi in a high percentage of their dogs. Clean-cut clinical evidence of the relationship of focal infection to urinary calculuc formation is difficult to obtain, but because of the definite experimental evidence it is probably advisable to eliminate all readily removable foci.

The relationship of stasis to stone formation is similar to the relationship of infection to stone formation in that a distinction must be made between primary and recurrent calculi. Again, as a cause of primary stone, stasis is of some importance; but as a cause of recurrent stone, it is a factor of great importance. The effect of stasis as a cause of recurrent stone is usually a double one. Besides its direct action in stone formation, it predisposes to infection or insures the perpetuation of an existing infection and thus adds the predisposing action of infection. In a urinary tract in which no stone has formed, the existence of stasis may itself not be an indication for an extensive surgical procedure aimed at eliminating the stasis. However, if a stone has once formed, strenuous efforts to eliminate the stasis as well as the infection are in order.

Albright[3] has rather convincingly championed the thesis that any alteration in urine which increases the tendency of a substance to be precipitated from the urine predisposes to stone formation. The stone which results is composed of the substance whose precipitation has been favored. Thus in cysteinuria, which is a hereditary disorder of cystein metabolism in which cystein is excreted in the urine, cystein calculi occur; in gout, in which presumably the concentration of uric acid in the urine is at times greatly increased,[4] uric acid calculi frequently occur; in hyperparathyroidism, where increased amounts of calcium and phosphorus are excreted in the urine, calcium phosphate calculi occur. The tendency of precipitation can be influenced in several ways: by a decrease in the volume of the urine leading to a general increase in concentration of all the substances dissolved in it; by a change in reaction of the urine from acid to alkaline, or vice versa, rendering some substances more insoluble; or by an increased excretion of a substance by the kidney. The increased excretion may be the result of a metabolic disorder, of which hyperparathyroidism and gout are typical examples, or the result of an excessive ingestion of the substance in the diet, as may occur in oxaluria.

Increasing the volume of urine is one of the easiest and most effective methods of decreasing the tendency of precipitation of many of the solutes. The importance of drinking large quantities of water as a preventive measure against stone formation should be impressed on all patients who have harbored urinary calculi.

The reaction of the urine influences greatly the solubility of various substances in it, and maintaining a proper reaction of the urine is an important measure in the prophylaxis against the recurrence of calculi. The type of reaction, whether acid or alkaline, which is to be maintained is determined by the kind of stone which has developed in the first instance. The composition of all urinary calculi, whether passed spontaneously or removed surgically, should be determined. Recurrent stones usually are of the same composition as the original stone. Since the majority of stones which are encountered consist of calcium and magnesium salts, it is usually necessary to maintain an acid reaction of the urine, which increases the solubility of these salts. Normally most of the metabolites excreted by the kidney are either neutral or acid; as a result the urine is usually acid in reaction, which is considered its normal reaction. The present fad of "alkalizing" for all ailments of mankind by taking alkaline drugs or by consuming large quantities of citrus fruits, which leave an alkaline ash to pass through the kidneys, must be considered as a definite factor favoring the formation of urinary calculi and as a distinct danger for patients who have harbored such calculi. When these substances are taken during an illness associated with pyrexia, at which time the urine is likely to be scant, the tendency to precipitation of calcium and magnesium is doubly increased.

The Sippy treatment of peptic ulcer, in which the systemic alkalizing salts of calcium, magnesium, and sodium together with much milk are employed, leaves an alkaline ash to pass through the kidneys practically continuously, and is right for the formation of urinary stone. It supplies in increased concentration the salts of which the stone is composed and, which is probably more important, aids their precipitation by rendering the urine alkaline for prolonged periods of time. Alkaline tablets, which at present have a large sale at cigar stands and soda fountains, must be placed in the same category with the Sippy powders.

In order to insure a good degree of urinary acidity at all times in patients who have harbored urinary calculi the continual ingestion of some urinary acidifying agent has been suggested. This is impractical and undesirable. It is impossible to make patients who feel well, as do most patients who have had urinary calculi removed, take medicaments several times daily for long periods of time. The administration of such salts as ammonium chloride, calcium chloride, or sodium acid phosphate, which are most commonly used as urinary acidifying agents, probably is too unphysiologic to be employed continuously. Adjustment of the diet so that an acid residue is left to pass through the kidney is probably a preferable method of maintaining an acid urine. If an acidifying agent is to be given, a salt like ammonium chloride is more desirable than sodium acid phosphate because it does not increase the phosphate radical in the urine which goes into the composition of many stones. However, ammonium chloride also possesses the disadvantage of increasing to a significant degree the calcium and the phosphate excretion in the urine, thus increasing the concentration in the urine of the substances of which many urinary stones are composed. Furthermore, it has the detrimental effect of causing a loss of calcium from the body.

A considerable amount of evidence has been accumulated indicating that vitamin A deficiency is a factor in the development of urinary calculi. Numerous investigators have successfully produced calculi experimentally by feeding diets deficient in vitamin A. The application of these results to humans, however, has been beset with difficulties; in animals a severe degree of avitaminosis and pronounced unphysiologic states are necessary before calculi appear, conditions which usually are not present in humans.

Further evidence for the relationship of vitamin A to urinary stone formation has been found in the correlation of the amount of the vitamin in the diet in certain regions with the incidence of urinary stone in those regions. In certain parts of the world, such as India, urinary stones and vitamin A deficiency are very common. On the other hand, in the South African Negro,[5] who subsists on a rich vitamin A diet, urinary calculi are almost non-existent. Also attributed to the increase of vitamin A in the diet is the disappearance of urinary calculi in the children of today; a century ago fifty per cent of all urinary calculi occurred in children and young adults.

A third type of evidence for the relationship of vitamin A to urinary stone formation has been found in the photoadaptation test as a measure of vitamin A deficiency. The rate of regeneration of the visual purple in the rods of the retina is dependent on the presence of vitamin A, and the rate of dark adaptation has been used as a measure of vitamin A deficiency, especially for deficiencies of sub-clinical degrees. As measured by this test, minor degrees of vitamin A deficiency are much more prevalent than was formerly supposed and application of this test to patients with urinary calculi has revealed vitamin A deficiency in as high as ninety-six per cent of cases.

In employing vitamin A together with an acid ash diet, Higgins[6] has been able to reduce the incidence of recurrence from sixteen to five per cent, and has by the same method been successful in causing the disappearance of formed calculi. Oppenheimer and Pollock,[7] in attempting to repeat Higgins' results, found that in none of the twenty-seven patients with urinary calculi studied by them did even a partial resolution of a stone occur; that in five patients an increase in size of the stone occurred; and that in one patient a new stone formed. Ezickson,[8] using the photoadaptation test as a measure of vitamin A deficiency, made the interesting observation, as had been previously reported, that whereas a deficiency of vitamin A is present in many of the patients with urinary calculi no improvement in the adaptation to light occurs in these patients following the administration of vitamin A. He concluded that patients with urinary calculi do not absorb sufficient vitamin A.

From present evidence it would appear that vitamin A deficiency predisposes to urinary calculus formation but that the administration of this vitamin in the form of oily concentrates is of questionable value as a preventive measure. Since its administration is, however, attended with little effort and expense, it is probably desirable to employ it until the problem in regard to its utilization in the patient with urinary calculi is completely solved.

Prolonged recumbency as occurs in certain paralytic conditions and in the treatment of certain fractures, frequently is associated with renal calculi. Several factors of those already described as favoring urinary stone formation are operative in the bedridden patient. A reduced fluid intake with a resultant small urinary output is likely to occur. If the patient is hospitalized he may receive much citrus fruit and have an alkaline urine. Probably the two most potent factors, however, are an increased urinary excretion of calcium and a stasis of urine in the kidney. The increased calcium excretion is secondary to a demineralization of bone which occurs in these patients. Stasis occurs in the kidney because in the recumbent position some of the calices are the most dependent portion of the urinary tract.

With the elucidation of the disease hyperparathyroidism, another factor at times causing urinary calculi, has been uncovered. This condition, usually the result of an adenoma of a parathyroid gland is associated with an increased excretion of calcium and phosphorus in the urine. Urinary calculi have been estimated as occurring in as high as sixty per cent of the cases of this disease. Considerable difference of opinion, however, exists as to the frequency of this disease and its importance as a factor in all urinary calculus formation. On available evidence today it seems to be a rare disease and a rare cause of all urinary calculi. Since, however, a large percentage of the cases develop urinary calculi, reliable blood calcium determinations are indicated in all patients who have developed calcium calculi. When reliable blood calcium tests are not obtainable the Sulkowitch test, which is a simple test performed on the urine, may be used for detecting excessive calcium excretion.

Another metabolic disorder to be kept in mind, especially when dealing with non-shadow casting calculi, is gout. In the two diseases, hyperparathyroidism and gout, urinary calculi may represent a manifestation of a fundamental metabolic disorder.

In this discussion a conscious effort has been made to consider only those aspects of urinary stone formation which have a practical significance and to avoid those which, although interesting and intriguing and accorded much attention, as for instance the protective colloids or the subepithelial plaque of Randall, offer nothing that can be used in therapy today.

SUMMARY

The first step in the prevention of recurrence of urinary calculi is the complete removal of the primary stone; stasis and infection, although important causes of primary stone formation, assume greater importance as factors in recurrence; experimental evidence of the relationship of focal infection to urinary calculus formation is so definite that all readily accessible chronic foci of infection should be removed; measures favoring solution of the salts of which urinary calculi are composed, such as diluting the urine and maintaining a proper reaction of the urine, are valuable prophylactic measures; vitamin A deficiency is a factor in urinary stone formation but its value as a prophylactic measure when administered to patients who have harbored urinary calculi is, however, questionable; hyperparathyroidism and gout are metabolic disorders to be kept in mind as occasional causes of urinary calculi; prolonged recumbency increases the susceptibility to urinary stone, and in patients who remain in this condition all possible prophylactic measures against stone formation should be instituted.

DISCUSSION

Dr. W. W. Holland, Macomb: There are a couple of phases of Dr. Droegemueller's paper that I would like to discuss. The first is to take an x-ray immediately after or during surgical procedures to rule out any small fragments of stone that might be left and to reveal soft shadows that did not show up on the original plate. It is important to flush the kidney pelvis through the incision in the pelvis after a nephrostomy tube has been inserted in order to wash out any small fragments. Higgins of Cleveland has devised a special irrigator for this purpose. Before the pelvis is closed it is important to pass a small ureteral catheter to wash out any small fragments that may have dropped into the ureter during manipulation. Various writers in reporting on this subject have mentioned the occurrence of stone in this way. In operations on the kidney the percentage of recurrence was high. This brings up the point of relation between fragments that are left and blood clot. Higgins has also advised that in suturing the pelvis or ureter we use very small catgut and put it in the serosa only, so there will not be a small loop of catgut left to form the nucleus of a stone. Dr. Cabot stresses a very important maneuver in this sort of surgery; when the stone is in the lower ureter, he introduces a nephrostomy tube after removal of the stone and then resuturing the kidney, using the posterior capsule. Postoperatively we should always do an intravenous pyelogram to be sure we have removed all the fragments, so that the patient will not return in a few months with what we think is a new stone but which is really a fragment that was left. The use of one of the sulfonamide groups of drugs is very important in treating infections of the urinary tract. Dr. Helmholz has worked these out with every known type of bacteria. These should also be used in the dressings of any infection. We have used large doses of vitamin A postoperatively.

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THE RATIONALE IN THE TREATMENT OF INFANTS AND CHILDREN

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The modern treatment of infants and children is based on the comparative study of groups of children in large infants' and children's hospitals. This treatment stresses both the fact that children should be recognized as individuals, and the use of good common sense.

I think that the prevention of disease in infants should begin with the prenatal care of the mother. The early reporting to the obstetrician, the monthly and weekly check-ups, and the correction of conditions that impair the health of the mother should go far in the prevention of various things that happen to new-born infants. The various drugs given to mothers to prevent pain in labor should be administered with caution and a thorough understanding of the progress of labor. After the baby is born, the mother should be placed in a comfortable room as soon as possible, and allowed to rest. The baby should be kept in as even a temperature as possible, preferably between 70 and 75, and allowed to nurse the mother in about 12 hours after birth.

At this point it is well to explain or rationalize the feeding of infants. Each infant is an

individual, and cannot be fed by any absolute scale or formula. When you consider that the mechanism of digestion is approximately that of an adult, and that you have to provide food for an activity that is many times greater than that of an adult, and growth which is enormous, you can see that the digestive capacity is taxed to the utmost. It was shown many years ago by group observation and experiment that infants do not empty their stomachs for at least three hours, and bottle-fed infants average one-half hour longer than breast-fed infants. Therefore, the four hour schedule has been accepted as the logical interval between feedings of healthy infants. Contrary to the views of some of our leading psychiatrists, the four hour interval and the attempt to keep an infant on schedule is important. Infants form habits quickly and it has been my contention that, since this is so, it is up to us to teach them good instead of bad habits.

Several years ago men became interested in the initial loss in new-born infants, and tried to correct it by giving glucose solutions, beta lactose solutions, and complimentary feedings immediately after birth. Grulee and his co-workers think that this wave of interference which went over the country at that time probably influenced the reduction of breast-fed babies. At the present time they advocate giving nothing but water until it is proven that the nurse is inadequate, even then allowing the baby to nurse a reasonable length of time on a satisfactory schedule with a complimentary feeding immediately after nursing.

The average number of calories and the average amount of fluid per pound of body weight is fairly well established for the normal infants. However, keeping in mind that infants are individuals, it is impossible to feed them by any set scale. If this were not true there would never be trouble in feeding. We will assume that every effort has been made to keep the baby on the breast and, in spite of our efforts, we have a bottle-fed baby. What kind of formula are we going to give this baby, and how are we going to know that this formula is adequate? We know that the average ounce of cow's milk contains 20 calories, evaporated milk 40 calories, sugar 120 calories, and the average ounce of dried milk, with the exception of Dryco, contains 120 calories, for feeding purposes. The normal infant needs an ounce and a half to two ounces of fluid per pound of body weight, and from 40 to 50 calories per pound of body weight. Newborn infants need more fluids than older children. Therefore, it is comparatively easy to make out a formula for an individual child. If the baby gains, is happy and contented, and the stools are normal you have hit on the proper formula. But you can only consider the first formula as an "X", and you go on from there to make necessary changes for the individual child. The weighing of the child at weekly intervals, the examination of stools, and the general well-being of the child are your guides in the correctness of your formula.

There are several kinds of feeding — cow's milk, evaporated milk, S. M. A., similac, and many other baby foods which are all good. In my experience I have seldom had to use anything but cow's milk and evaporated milk. The only advantage I can see in foods such as S. M. A. and similac is that they are easily prepared and contain necessary vitamins and sugars. The average feeding should contain from 3 to 4% sugar; that is, 4 tablespoonfuls of Karo syrup to a quart of mixture makes approximately 4%, or plain granulated sugar, or 6 tablespoonfuls of dextramaltose. Honey and cartose are sometimes used. Tice of Philadelphia states that more babies get along well on granulated sugar than on any other preparation.

Here it is well to emphasize again the digestive capacity of the infant, and to realize that the least disturbance might cause a digestive upset — colic, diarrhea, etc. — without any infection or pathology. Various physics and cathartics are condemned for several reasons: first, they cloud the diagnosis; second, they are habit forming; third, they actually create digestive disturbance. It is reasonable to believe that, if the technique of preparing feedings has been the same and there has been no change in the quantity, quality or amount of sugar, you must look further than the formula for the cause of vomiting and diarrhea.

It is common knowledge that there is frequently a digestive disturbance — colic, vomiting, diarrhea, and sometimes temperature — the day after the mother gets home from the hospital, or a few days after the mother resumes

her household duties. We know that babies often show digestive disturbance the day after the maid's or the nurse's afternoon off. This, I am sure, is due to a nervousness on the part of the mother, which is easily transmitted to the baby.

At the present time it is customary to begin light cereal feeding with the formula at about four months. This gradually is increased, and the various vegetables, cooked fruits, and soups are added as the infant's digestive capacity increases. It is believed that they get their natural vitamins by this method, and have a better resistance to various infections.

There has been an everlasting controversy between the doctor, practical nurse, grandmother, and aunt as to the digestive disturbance caused by the cutting of teeth and worms. We are apt to lean over backwards in our anxiety to teach the mother that teething is a physiological process, and that the presence of worms can be verified by examination of the stools. However, any doctor who has raised a family of his own, or has been in close contact with infants cutting teeth must have observed the coincidence of digestive disturbance with the appearance of one or more teeth. If we concede this to be true, and remember that the digestive capacity is still taxed to the utmost under normal conditions, we cannot overlook the fact that a middle ear infection, or anything else causing the child discomfort would bring about a digestive disturbance. Conservative treatment at this point with good nursing care is usually all that is necessary. Teething rings, although rather unsanitary, are not particularly harmful, but the lancing of gums is both a cruel and dangerous procedure. If worms are found, steps should be taken to eliminate them, and this is not easy. It is like scabes and other things that attack whole families. The treatment is that of eradication of the source of infection, and getting rid of the worms by the various methods found to be efficient. However, it cannot be done by one or two doses of Janes vermifuge, but must be done thoroughly and efficiently over a long period of time.

Prevention is our first line of defense in the treatment of infants and children. The resistance should be built up by the proper administration of the various vitamins, especially those of known value such as A and D to prevent rickets, B_1 combinations with riboflavin, and vitamin C. Vitamins A, D, and C are given routinely to all infants, and it is my custom to give rather large doses of the B complex after depleting illnesses where there is usually loss of appetite, and sometimes vomiting and diarrhea.

The Committee on Contagious Diseases of the American Academy have recommended three immunizing procedures, all to be given within the first year of life: 1. Immunization against whooping cough with Sauer's vaccination at 8 months, 2. immunization against diphtheria at nine months, and 3. vaccination within the first year. Some men have combined tetanus and toxoid with the recommendation of an additional injection of 1 cc. of tetanus toxoid each year. Other men have combined whooping cough and toxoid in the same office call. These procedures are not recommended by the Committee. While I do not believe that all men should give the same advice on all procedures, I certainly think that the men who treat children should agree to give the same advice in regard to the immunizing procedures recommended by this Committee. If we could formulate some system by which all children could be immunized the first year against diphtheria, whooping cough, and small pox we would go far in our fight against the incidence of these diseases.

The five doses of scarlet fever serum, although recommended, is still a questionable procedure, and is not recommended until well up in the end of the second year. As we all know, scarlet fever is a treacherous disease. Many children have it and are hardly sick enough to be put to bed, and yet will infect another child who develops a fulminating case. Knowing the danger and complications of this disease, I strongly recommend that children two years or over be immunized, in spite of the fact that you are liable to make enemies of both mother and child. However, it should be explained that the procedure is not proof against the child having the disease, and that we only know that it reduces the incidence and severity, and those who are immunized are not so apt to have complications. The use of sulfa drugs has proven disappointing in scarlet fever. Convalescent serum and a new antitoxin recently produced have proven to be life-saving measures in fulminating scarlet

fever. Dr. Hoyne of Chicago thinks that convalescent serum given to exposures will immunize for about ten days. If the exposure is continuous, or the child is re-exposed, it is well to give another treatment.

There is no immunizing treatment of proven value against measles. Placental globulin and convalescent serum given after exposure in small doses have been found to be valuable in preventing severe attacks, but do not give permanent immunity.

Up to date we have no proven immunizing procedure against upper respiratory infection, so as a preventive measure, we have to rely on the general health of the child, building up his immunity by balanced diet, removal of all sources of focal infection, and a toughening process consisting of keeping the environment that of body temperature rather than that of a sweat bath. Much of the susceptibility of children to infection is due to super-heated houses, bundling for zero temperature in mild weather, rags around the neck, greasy messes on the chest, and lack of the proper amount of rest.

It has been my observation that each year we have a different type of virulence and sequilla in upper respiratory infections. A drug that seemed to prove efficient last year has little or no effect on the condition this year. One year we will have complications of pneumonia, the next year a run of rheumatic conditions, and possibly another year many severe middle ear infections with mastoiditis and mastoid operations as an end result. This year we have had a great many gastro-intestinal upsets as the result of upper respiratory infection. Therefore, it is impossible to say that a certain line of treatment is specific. The past few years we have been more and more amazed and gratified by the apparent therapeutic effect of the sulfa drugs, and it is hoped that this time we have found something that is specific in its effects, rather than the effect being due to the change in the virulence and type of infection. The treatment is still symptomatic, but we have found it advisable not to give other drugs when we are giving the sulfa drugs. We also feel uneasy when we are giving these drugs in full doses in the home where we cannot watch the effect by laboratory procedure.

There is one other old enemy — diarrhea, especially the type that we get in the summer months, for which we hope we have found a drug in the form of sulfaquanidone that will prove specific. The treatment of the disease has gone up and down the scale from castor oil, paregoric, bismuth preparations, starvation and various types of astringent enemas. At the present time we confine our treatment to absolute rest, a non-irritating diet with as high a caloric value as possible, keeping up the water balance, blood transfusions if necessary, and large doses of sulfaguanidine. Sulfathiazole and sulfadiazine sometimes have to be substituted. In spite of arguments for and against, we still like to give sodium bicarbonate with the sulfa drugs, especially in diseases of children.

SUMMARY

In summing up, I want to emphasize: 1. that the treatment of infants and children depends upon applying proven scientific methods to the individual child; 2. the adoption of a uniform plan in the use of immunizing procedures approved by a special committee appointed by the County Medical Associations; 3. older children, especially those who have not been immunized, should be given the Schick test and the Dick test, immunized if positive, and re-vaccinated before entering the first year of school; 4. we no longer give drastic cathartics to work off colds; 5. Rest is important. I was impressed several years ago in talking with a woman about her sick child during the flu epidemic in the World War. She stated that she and the doctor sat up all night and gave medicine every fifteen minutes, and I told her that she must have had a damned tough child!

VIRUS PNEUMONIA

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Until a few years age pneumonia had been considered a dreaded disease. Recently however the mortality rate has been reduced from 30% to less than 10%.[1] This has been attributed to a large extent to the prompt and widespread use of the new sulfa drugs. When indicated, chemotherapy is used in conjunction with anti pneumococcal serum. However, when the pulmonary infection is not pneumococcal in origin

and does not respond to these new chemicals, we find ourselves at a loss as to further treatment.

That such cases do occur, is evidenced by the numerous reports which have been coming in from various sections of the country, and from our own observations here in Chicago. These conditions have been labeled atypical pneumonia, acute pneumonitis, bronchopneumonia of unknown etiology (variety X), atypical pneumonia of unknown etiology and virus pneumonia. The latter name seems to be the one most widely used.

Gallagher[2] reported eighty seven cases in 1941. Thirty two cases have been reported by Longcope.[3,4] Recently, August 1942, Markham[5] reported one hundred seventy five cases from Fort Osborne Military Hospital in Canada. Other reports found in the literature are those of Reiman[6], Weir and Horsfall[7], Hornibrook and Nelson[8], Kneeland and Smetma[9] and Moss.[10] The new publication "War Medicine",[11] devotes a special article to this disease in its issue of March 1942.

This type of pneumonia is still present here and elsewhere in considerable numbers. It is too early to draw any final conclusions, but enough cases have already been observed to make possible this preliminary report.

Etiology — In Chicago we have been witnessing these pneumonias since the beginning of 1942. Its incidence seems to be increasing. Most of the cases occur in young adults between the ages of twenty and forty five. It is more prevalent in women. Apparently it is communicable, as many of the patients contracted the disease after nursing other such patients. Institutional epidemics have been reported by Gallagher,[2] Markham[5] and others.

Bacteriology — Careful studies have been made of the sputum and blood of many such patients. The outstanding feature is the failure to isolate from the sputum any bacteria which are usually held responsible for most pneumonias. J. Markham[5] in his studies found the sputum of these patients to contain the usual flora seen in normal individuals. The blood cultures as a rule are negative. Stickney and Heilman[12] of the Mayo Clinic, have made a very careful study of one such case of atypical pneumonia and have successfully isolated a virus which is antigenically related to the virus of psittacosis.

Symptoms — The incubation period is anywhere from five to fifteen days. The onset may be sudden with a chill, but usually is gradual with lassitude, marked weakness and severe headache. A hoarseness may develop during the first few days. About the third or fourth day a dry cough makes its appearance. This later becomes paroxsymal in character, somewhat productive and may last for several weeks after the patient has been temperature free.

Clinical Findings — The patient is markedly prostrated, but does not appear to be very ill or toxic. The breathing is neither increased nor labored. There is usually no cyanosis. The temperature varies between 100 and 104 and the pulse is only slightly increased. The fever will last from seven to fourteen days. In rare cases it may last as long as three to six weeks. Relapses in temperature are common.

Physical examination of the chest reveals very little during the early stage of the disease. Later one may detect slight impairment of resonance in one or more areas. This is usually accompanied by some fine inspiratory rales. By the end of the second week, the findings tho not marked, are diffuse and bilateral as a rule. Only in the unusual case does one find definite dullness and marked bronchial breathing.

Laboratory Findings — As was mentioned above blood cultures are usually negative. The sputum is thick grayish white and mucoid in character. It is not blood streaked. Further microscopic and bacteriologic studies reveal nothing unusual. The leucocyte count varies between 6,000 to 10,000 with a normal differential. The sedimentation rate is only slightly increased. X-ray of the lungs usually reveals bilateral infiltrative processes starting at the hilum but not extending to the periphery. This may account for the scarcity of the physical findings. In the exceptional case the x-ray may reveal a consolidation of one or more lobes.

Clinical Course and Treatment — Practically all patients get well. Complications are rare. The few deaths that have occurred, have been in old people who had associated degenerative changes in other parts of the body. The temperature usually drops by lysis after about seven to fourteen days and as mentioned above, may

last three to six weeks. None of the sulfa drugs seem to have any effect. Occasionally stopping the drug will be followed by a drop in temperature. In a number of cases antipyretics of various kinds seemed to be of value. Some did not respond to any medication. There the treatment is chiefly symptomatic. If the cough is disturbing a sedative cough mixture is usually prescribed.

DISCUSSION

The symptoms, clinical and laboratory findings as given above, speak for a specific clinical entity. It is possible that such cases existed in the past, but because of the scarcity of physical findings x-ray studies were not made and the pulmonary infiltrative processes were overlooked. However, this unusual form of pneumonia has now been reported with greater frequency from various sections of the country. It has been prevalent also during the past summer, at a time of the year when upper respiratory infections and pneumonias are at a minimum. It seems to be communicable and outbreaks have been reported in institutions and camps. Is it possible therefore, that these atypical virus pneumonias which we have been seeing in increasing numbers during the past nine months, represent the first wave of an epidemic which may in some way be related to the much dreaded influenza epidemic?

SUMMARY

1. A present widespread occurrence of an unusual type of pneumonia is described.
2. This pneumonia is thought to be due to a virus.
3. None of the sulfa drugs seem to have any effect on the course of the disease and temperature curve.
4. The question is raised as to the possible relationship of this disease to an influenza epidemic.

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A THEORY ON THE ORIGIN OF CANCER

Preliminary Report

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It is the purpose of this paper to present a preliminary report of a theory on the origin of cancer and a method of treatment. A review of the literature for the past twenty years failed to reveal any work that had been done which might be considered analyolous to the theory and form of treatment herein presented. Although the material that we have to present (in this report) may appear to be meager and incomplete, we felt that because of our present uncertainty in proceeding with this work, due to the war, an introductory resumé is profitable.

Normal tissue grows in an orderly fashion and definite pattern. Its growth ceases when it becomes a physiologic functional structure. Cancer, on the other hand, is a spontaneous progressive new growth of tissue, characterized by a lack of order of its cellular structure, with little or no differentiation or organization, whose sustained progressive growth will produce ultimate death to the host.

Age, anemia, heredity, carcinogenic substances, irritation, irradiation, trauma, tissue sensitivity, embryonic cell rests, and nerve influence are among the many predisposing and inciting factors of cancer. But the isolated factors in themselves are insufficient to produce cancer unless perhaps there is a disturbance of balance in the

growth control. The isolated predisposing causes may be present in many people and yet they do not develop malignant growths. A constant pipe smoker may not develop carcinoma of the lip but may, however, develop a cancer elsewhere in the body. The explanation can be designated to our present knowledge of hormonal activity, by the specificity of action of hormones on specific tissue. As proof of tris specificity of hormonal action, it is well known that estrogenic substances will cause hyperplasia of breast tissue, vaginal mucosa and endometrium; that pregnancy stimulates cancer of the breast tissues, ovaries, and uterus to more rapid growth, but does not have much effect on cancer of other organs; in fact, it may cause an actual regression of growth in some structures.

Hence the etiology of cancer cannot be merely designated to the predisposing factors mentioned above. But the presence or absence of specific growth controlling hormones for specific tissues is considered as a vital factor in balancing the pattern of tissue growth.

In the search for a most abundant source of growth controlling hormones, the pregnant mother at term should be selected for the following reasons: first, the embryonic cells possess more than any others the essential pattern of tumor growth; (Cohnheim's theory of the embryonal cell rest was founded on this fact); second, it is presumed that as a result of the supply of growth controlling factors or hormones the embryo develops into a well organized and differentiated organism; third, hormonal activity is at its highest peak in the last days of pregnancy or at full term as shown by the increase in the amount of known hormones in the mother's blood stream from the beginning of pregnancy to the end. (Wold-Endocrinology in Modern Practise).

Urine collected from the pregnant mother during the second stage of labor and umbilical cord serum obtained immediately after the severance of the cord was used in the treatment described further. The urine was rendered sterile by passing it through a Berkfeldt filter, collecting and capping in bottles under sterile conditions and found to be sterile after the above described technique was used in preparing the material, and in no instance did infection result from its injection subcutaneously.

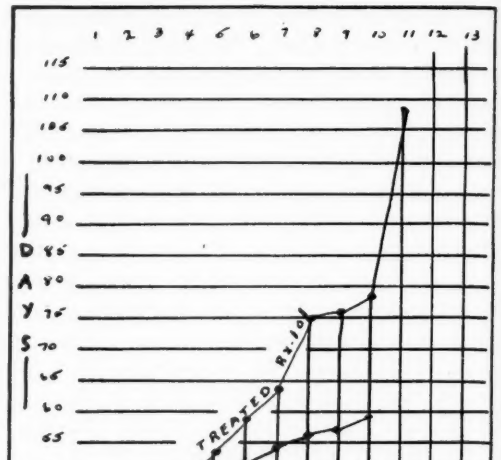

Figure A

The experimental data that has been compiled is promising although admittedly incomplete. Mice in whom spontaneous tumors developed (carcinoma of the breast) and a group of A. B. C. mice in whom sarcoma 180 were transplanted were used as both control and treated subjects. All mice were obtained from the Roscoe Jackson Memorial Laboratory, Bar Harbor, Maine. The same technique was used in transferring the tumor in each experiment so that all animals received approximately the same amount of tumor tissue. The tumor was cut into fine pieces, a small portion was placed inside the bevel of a 16 gauge needle and the needle inserted subcutaneously in the abdominal wall. The stilet was then pushed beyond the end of the bevel — thereby depositing the tumor tissue in the abdominal wall as the needle was removed. After having been transplanted, the mice were divided

into two groups, one left untreated and kept as controls, the others given ¼ cc. of a 50% dilution of pregnancy urine daily beginning the day following the transplantation.

Although the mice in both groups developed tumors, Figure A shows the contrast in the life span of the mice that were treated as compared to the controls. The average lifetime of the treated mice was 63.09 days as compared to 47.7 days for the control group. Another interesting observation was that the untreated mice all died within 35 days after the death of the first mouse, while the treated mice all died within a span of 82 days after the death of the first mouse in the treated group.

This experiment was repeated in another group of transplanted tumor mice and the treated group were given ¼ cc. of cord serum subcutaneously daily. The average life span of the control group was 30.4 days and of the treated group 56.2 days. Figure B also bears out the fact that the entire control group were dead within 20 days after the first mouse died in that group. In the treated group of that series, although 4 mice died on the 36th day after transplantation of the tumor, the majority lived over a span extending between 42 and 81 days after transplantation. In the spontaneous tumor groups the observations described above were

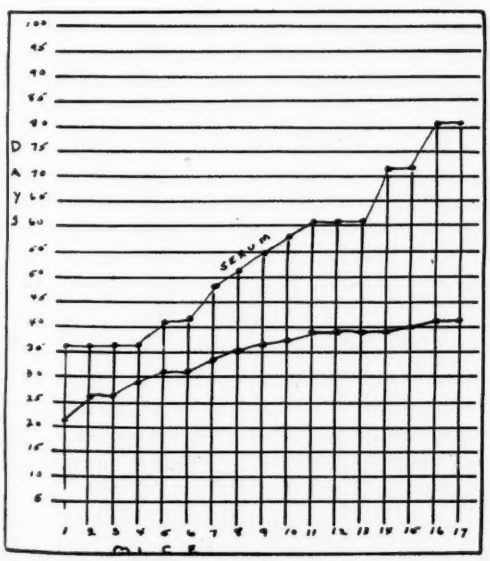

Figure B

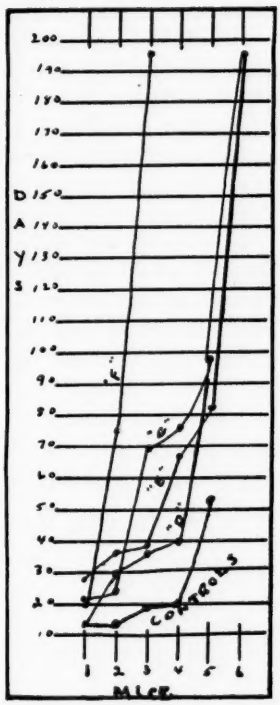

Figure C

again confirmed as shown in Figure C. Groups D and E of the spontaneous tumor mice were treated with pregnancy urine, and groups F and G were treated with cord serum.

The histological pictures in the tumors of the treated mice revealed considerably more necrosis than in the untreated group. These observations were made by Dr. A. Mathews, pathologist of the St. Anthony Hospital in Rockford, Illinois, and by Dr. H. Rusch, pathologist at University of Wisconsin. However, these men did qualify their findings with the remark that the areas of the tumors selected for sectioning may have differed in the degree of necrosis. Care was taken, however, in selecting the healthiest appearing tissue for sectioning and study.

SUMMARY

We have repeatedly mentioned the fact that we are fully aware of our inconclusive results; nevertheless, the laboratory findings do show a spark of future possibilities. The material was also used in several cases of inoperable carcinoma in human beings, and here again we observed what we considered interesting and ben-

eficial, yet inconclusive results. The results in the clinical cases were based on the fact that these individuals were relieved of their symptoms and were able to carry on their daily routine. We are not including our clinical case reports in this paper, because of the comparatively short time which has elapsed since the beginning of this work, although one case has been treated for 18 months and several others for a year.

Perhaps the work which has been started may find its way to the interest of investigators with better facilities to carry on such an experiment and thereby determine the true worth of our efforts.

CONSIDERATIONS REGARDING THE DEPTH OF ANESTHESIA

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Not long after I graduated I had to reduce a fractured hip and put on a plaster spica. The reduction of the hip happened to prove simple; but in the application of the cast I encountered one difficult problem, I did not know when to stop. Many situations in medicine present similar problems. How much or how little of a drug is required? It may be digitalis, or sulfanilamide, or thyroid extract. The skilful physician knows the usual requirements but he also realizes that the ultimate decision depends on the patient's reaction to the drug. He must be able to recognize both the therapeutic effect and the hazards and manifestations of overdosage.

The same principle is of upper-most importances in anesthesia. We can only estimate within wide limits the requirements of each individual, and we rarely know what concentration of the drug is actually in the patient's body. Only a blood analysis, or at least a gas analysis of the contents of the breathing bag, would give us the actual figures. Fortunately, they would be of academic interest only. I like to take the view that the patient does the gas analysis and it is for us to evaluate his results and to correlate them with the requirements of the surgical procedure.

Presented before Section on Surgery, 102nd annual meeting, Illinois State Medical Society, Springfield, May 20, 1942.

The chief purposes of anesthesia are to abolish pain, to prevent the patient from moving, to obtund certain troublesome reflexes, and to produce muscular relaxation. These conditions vary with the depth of anesthesia. Anesthetists divide the depth of general anesthesia into four stages. For simplicity, I am going to omit these details and discuss chiefly the third stage or stage of surgical anesthesia. The anesthetist divides this stage into four planes, but again for simplicity, I will limit myself to the terms light and deep anesthesia.

The stage of surgical anesthesia is entered when the eyelid reflex is abolished. This can be determined by pulling up the eyelid, and, if necessary, stroking the eyelash a little. In surgical anesthesia there will be no muscular effort to close the eye. Loss of the lid reflex may be taken as an indication that the patient will have no consciousness of pain, although he may show some reflex reaction to stimulation. About this level, also the gagging and vomiting reflexes are obtunded. For smooth anesthesia these reflexes must be kept obtunded.

In light surgical anesthesia, provided there is no respiratory obstruction, the breathing is deep and regular. As deep anesthesia is approached, intercostal paralysis gradually develops, and in very deep anesthesia the breathing is carried on entirely by the diaphragm. This can be recognized by elevation of the abdomen while the chest remains stationary or even sinks in on inspiration. Since respiratory obstruction can simulate this picture, it is necessary to be sure that there is a free airway. The best single guide to the depth of anesthesia is the depth of respiration. As long as there is an adequate respiratory volume, one can be sure that the anesthesia is not too deep. Shallow inadequate respiration suggests the approach of the fourth stage, or stage of respiratory arrest. Transition to fourth stage anesthesia does not mean that the patient is dead. It means that he is not getting oxygen and will die unless that is supplied by artificial respiration. Supplying oxygen or air and permitting elmination of the anesthetic agent will quickly restore spontaneous respirations.

As anesthesia progresses, muscular relaxation increases. This is the chief indication for deep anesthesia.

Not all anesthetics are capable of producing deep anesthesia. Nitrous oxide and ethylene can produce only very light anesthesia. Some patients cannot even be anesthetized with these agents alone. Overdosage with nitrous oxide or ethylene does not result in the usual effects of deep anesthesia but involves such reduction in oxygen that serious oxygen want ensues. It is important to bear in mind that the signs of oxygen want may be mistaken for signs of too light anesthesia. Muscular contractions, laryngeal stridor, retching, rapid breathing, and increased pulse rate, though suggestive of too light anesthesia, may be the result of oxygen want. Cyanosis is not always present. If the mistake is made of giving more of the anesthetic agent, serious results may ensue.

Ether, chloroform and cyclopropane are all capable of producing deep anesthesia, although cyclopropane usually produces less relaxation. Intravenous anesthetics, evipal or pentothal sodium, can produce deep surgical anesthesia, but are less reliable and more difficult to control. Avertin, administered by rectum, reaches its full effect in about one-half hour. It can produce deep anesthesia, but, since the required dosage has to be estimated beforehand, the resultant depth is obviously uncontrollable. It can only be used safely in doses which will produce very light anesthesia. Added depth can be obtained by addition of an inhalation anesthetic such as nitrous oxide. Respiratory depression or arrest must be guarded against whenever any potent agent is used, particularly those administered by intravenous or rectal injection.

The depth of anesthesia required for any surgical procedure has an important bearing on the choice of preoperative medication, anesthetic agent and technic.

Regarding premedication, a simple rule is that the deeper the anesthesia required the less sedative should be given. This apparent paradox is based on the fact that such drugs as morphine and the barbiturates increase the respiratory depression, and in deep anesthesia they make it difficult to administer enough anesthetic, and they increase the hazards of oxygen want and carbon dioxide excess. If nitrous oxide or ethylene is to be used, quite heavy premedication is indicated as these agents require the added sedation. For cyclopropane anesthesia very light premedication is indicated.

Regarding the choice of anesthetic agent, it is obvious that nitrous oxide and ethylene are suitable only for those operations which do not require muscular relaxation. For good relaxation one of the more potent inhalation agents should be selected, and while much can be accomplished with cyclopropane, ether remains the safest agent when profound relaxation is required. Intravenous anesthetics should be used only for short simple operations because prolonged control in deep anesthesia is difficult and hazardous. They should be used by a competent anesthetist who can take care of respiratory problems and who has an assistant to administer the drug.

Regarding the choice of technic, the chief consideration pertains to the use of endotracheal anesthesia. While the endotracheal technic has many other uses unrelated to the depth of anesthesia, it is of great value in cases of abdominal surgery where deep relaxation and freedom from the straining caused by respiratory obstruction are important.

One further consideration regarding the choice of agent and technic must be stressed. Apart from one or two distinct limitations such as lack of potency of nitrous oxide and ethylene, almost anything can be done with almost any agent and technic. The choice is largely dependent on the experience, ability and preference of the anesthetist.

Perhaps this paper should have started with the question "Why bother about the depth of anesthesia?" Like all things in medicine, the answer involves the best interests of the patient. The patient pays a high price for too deep anesthesia. He also pays a high price for too light anesthesia. Like all things in medicine, there is an optimum.

Let us consider the hazards of too light anesthesia. If the anesthetist inadvertently lets the patient come up to the verge of the third stage, the surgical trauma may affect the patient's nervous system, causing more tendency to shock. Even more troublesome may be the return of certain reflexes. Vomiting may occur. The pharynx fills with vomitus and the patient may aspirate some foreign material. In his

efforts to remove the vomitus by suction or other means, the anesthetist is forced to interrupt administration of the anesthetic and still lighter anesthesia and greater disturbance of reflexes occur. The course of the anesthesia is no longer smooth. High concentrations of the agent, irritant to the respiratory tract, are administered in an effort to recover the ground that has been lost. Even if vomiting does not occur, gagging and laryngospasm may develop with respiratory obstruction, oxygen want, etc., necessitating the administration of irritating concentrations of the agent, and so forth. All this injures the patient's immediate condition and leads to post-operative pulmonary complications. Another aspect of too light anesthesia is that it may hamper the surgical procedure. Muscular tension or movement may in a moment undo a carefully executed orthopedic operation. Lack of adequate relaxation adds immeasurable difficulties to the work of the abdominal surgeon, leads to greatly increased reflex stimulation, trauma to viscera, longer operative time, imperfect surgical results, and to great irritability on the part of both surgeon and anesthetist. The anesthetist must accept the responsibility of producing smooth anesthesia of adequate depth to meet the surgeon's needs. A prominent surgeon once told me that he had visited a well known surgical clinic for several days. In every operation he witnessed the surgeon had to stop his work at least once to let the anesthesia technician establish more satisfactory anesthesia. There is no need for surgeons to tolerate such inept assistance, nor to subject their patients to such unnecessary insults. Good anesthesia can and should be provided for all surgical patients.

Let us consider now the hazards of too deep anesthesia. The anesthetist is tempted to play safe and give more anesthesia than is necessary. The surgeon is tempted to ask for more relaxation than is necessary. In each case the patient pays a price. Deep anesthesia causes respiratory depression, inadequate ventilation, oxygen want, and carbon dioxide excess. The oxygen want may not be sufficient to cause obvious cyanosis but it may show itself in an increased pulse rate and a falling blood pressure. The carbon dioxide excess disturbs the acid base balance and undoubtedly causes other serious results. Irregular jerky breathing in very deep anesthesia is usually due to carbon dioxide accumulation. The disastrous convulsions which sometimes occur in deep anesthesia are probably related to carbon dioxide excess. Deep anesthesia in the hands of the incompetent anesthetist has the added hazard that it verges on inadequate respiratory exchange or even respiratory arrest. In either case the patient may die from acute oxygen want. The well-trained anesthesiologist, on the other hand, recognizes the inadequacy of the respirations, and, if necessary, may maintain very deep anesthesia for the surgeon's benefit while supporting the respirations by artificial means.

Prolonged deep anesthesia has a serious effect on the circulation. Profound muscular relaxation deprives the venous system of its normal support, respiratory depression removes a mechanical asset to circulation, and deep anesthesia has a depressant effect on both the vasomotor center and the tone of the peripheral vessels. All these factors combine to produce shock.

Sometimes the abdominal surgeon's work can be facilitated by lightening rather than deepening the anesthesia. In very deep surgical anesthesia, when the intercostal muscles are paralyzed the diaphragm is carrying the whole respiratory load and its action may become aggravated and jerky. This disturbs the surgeon. If the anesthesia is lightened to permit intercostal activity the diaphragmatic movement may subside and working conditions improve.

In most abdominal operations the surgeon requires the greatest relaxation at the time he opens the peritoneum, explores the abdominal cavity and packs off the intestines, and again at the time he is closing the peritoneum. A good anesthetist will provide deep anesthesia for these procedures but will lighten the anesthesia during the intervening period.

Deep anesthesia adds to the post-operative pulmonary complications. It results in a longer period of depression after the operation. The prolonged relaxation, respiratory depression and obtundation of the respiratory reflexes increase the dangers of atelectasis and aspiration pneumonia.

A word may be said here about regional anesthesia. For abdominal surgery nothing produces better relaxation than a spinal anesthetic. Undoubtedly spinals have answered the problem of

relaxation for many surgeons who otherwise had to tolerate unsatisfactory inhalation anesthesia. This method, of course, has its drawbacks as well as its advantages, and the debate on spinal vs. inhalation anesthesia still goes on. Probably the best answer at present is that each clinic should use the method which proves most satisfactory in their hands. It is generally agreed, however, that for high abdominal operations in poor risk patients spinal anesthesia is undesirable. In such cases a very useful method is to combine light inhalation anesthesia with an intercostal block or an abdominal wall block to produce the necessary relaxation. Occasionally when efforts to produce adequate relaxation with inhalation anesthesia fail, the surgeon can help the situation by injecting a local anesthetic into the rectus muscle.

I have tried to present a paper which will be helpful to the average surgeon. I believe that better understanding of such problems leads ultimately to greater confidence. Good anesthesia can produce all the working conditions which the surgeon requires with a minimum of hazard to the patient. The surgeon's peace of mind, as well as the patient's welfare, will depend on the confidence and understanding that exist between surgeon and anesthetist. A competent anesthetist who understands the physiologic and pathologic processes involved can co-operate with the surgeon in providing the necessary working conditions, and at the same time guard against unnecessary damage to the patient.

By judicious choice of anesthetic agents and technics; by careful individualization of the preoperative medication; by proper control over the respiratory mechanism, avoidance of obstruction and support of respiratory exchange when necessary; by careful observation of the signs of anesthesia and avoidance of sudden disturbances; by constant evaluation of the patient's general condition; by judicious use of regional anesthesia when indicated; by supervision of the post-operative period of depression; by these and many other contributions a competent anesthesiologist with the confidence and co-operation of the surgeon can safeguard the welfare of the patient, which is the ultimate aim of all concerned.

SUMMARY

The dosage of general anesthetic agents required in any case cannot be accurately foretold. It must be gauged according to the patient's response. The depth of anesthesia is estimated on the basis of the signs of anesthesia. Nitrous oxide and ethylene can produce only light surgical anesthesia and attempts to produce deeper anesthesia with them result in oxygen want. The depth of anesthesia required for the proposed operation has an important bearing on the choice of premedication, anesthetic agent, and technic. The deeper the anesthesia the less premedication should be given. For good relaxation one of the more potent anesthestics should be used. There is an optimum depth of anesthesia in every case. The patient pays a high price if the anesthesia is too light for the surgeon's work. He also pays a high price for too deep anesthesia, which should only be used when the surgical procedure requires it. Regional anesthesia in selected cases aids in producing adequate relaxation. A competent anesthetist can do much to avoid the hazards of anesthesia.

DISCUSSION

Dr. Hugh O. Brown, Chicago: It is hardly necessary to add anything to Dr. Cassels' excellent presentation on anesthesia. He has emphasized that the anesthetist has the best control over the depth of anesthesia with the volatile and gaseous inhalation agents. In the event of inadvertent overdosage and depression of respiration, the drug can be withdrawn and the anesthesia quickly lightened. This is not the case with intravenous, rectal, or spinal anesthesia, in which the error of an excessive dose may be beyond correction. The drug cannot be withdrawn, but must be detoxified and excreted before its action subsides. If the circulation is unimpaired, and if respiration can be supported with oxygen and artificial ventilation for a while, disaster may be averted. In view of these possible complications with intravenous, rectal, and spinal anesthesia, these methods should not be attempted by physicians without special training and experience, and one should always have at hand an apparatus for efficient resuscitation with oxygen.

Spinal subarachnoid anesthesia is an ideal anesthetic for intraabdominal surgery because

of the excellent relaxation it affords, but as Dr. Cassels has stated, is an unwise choice for the poor risk patient in high operations. Some of the high mortality in spinal anesthesia may be attributed to its use by physicians with inadequate specialized training, often for patients who present an unusual risk. The rare neurological residuals following spinal anesthesia are likely due to carelessness in technic, such as the injection of alcohol or other sterilizing solution unrinsed from needle and syringe, or due to poor judgment in choice of drug, dosage, and concentration.

Dr. Cassels has emphasized the importance of individualizing the choice and dosage of preliminary medication. In large and busy clinics, such as at Cook County Hospital, we often see the consequences of routine premedication. Many patients may come to the operating room inadequately depressed, and therefore more difficult to anesthetize, whereas in others the effect may be excessive. It should be hardly necessary to warn against administering any anesthetic other than local to the patient in a semicomatose state, whether the depression be due to drugs or disease.

Most anesthetic accidents and complications are due to respiratory obstruction. We must be eternally vigilant in maintaining patency of the airway, and adequacy of the pulmonary ventilation. Even slight degrees of oxygen want should be prevented. As training of physician anesthetists increases in volume, the valuable endotracheal technic should become available to more of our state's surgeons.

Special training in anesthesia is available at several hospitals in Chicago, in the form of short post-graduate courses, or as full time residencies leading to certification by the American Board of Anesthesiology, and these facilities are soon to be used for training of medical officers in anesthesia. The need in the armed services for physicians trained in anesthesia is great, so all with experience or interest in this field are urged to apply.

THE MYTH OF POSTOPERATIVE PNEUMONIA

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Symptoms and signs indicating pulmonary consolidation are frequently present following operations upon the abdomen, especially such surgical procedures as involve the gastrointestinal tract. It is the major premise of this paper that when under such conditions the diagnosis of postoperative pneumonia is made, upon the clinician rests the responsibility of excluding a spreading peritonitis as a direct cause of the pneumonia. As a part of that premise we wish to state that, except for pulmonary atelectasis, pneumonia appearing in the first seventy-two hours after potential gross soiling of the peritoneum in the majority of instances represents a spread of infection from the peritoneum and the clinical signs of pneumonia are frequently detected before the causative peritonitis is suspected.

As surgeons we have no special interest in pneumonia, but we are interested in such basic errors in diagnosis as may divert our attention from complications developing within the field of operation. It has been my experience that the early diagnosis of spreading peritonitis as an operative accident is frequently not made, though the incidence of peritonitis as a postoperative complication has sharply decreased in the past decade or less.

It will be recalled that it is only twenty years or so since we began to recognize the frequency of postoperative pulmonary collapse, which, prior to that period, was considered to be a so-called aspiration pneumonia. We have established the mechanism of this lesion by the prophylactic use of CO_2 inhalations and by the bronchoscopic removal of mucous plugs when collapse does occur.

Among the various complications responsible for morbidity and mortality folowing abdominal operations spreading peritonitis still takes first place. Occurring as it does following procedures

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Presented before the Section on Surgery, 102nd Annual Meeting Illinois State Medical Society, Springfield, May 20, 1942.

of major severity, it is less easily diagnosed in the invasion period than when it occurs by extension from such inflammatory foci as appendicitis, perforation and the like, because the clinical picture upon which we base our diagnosis of diffuse peritonitis does not always unfold itself in the same manner postoperatively.

The most frequent sources of operative contamination of the peritoneum are soiling from stomach or intestinal contents during open bowel resection, leakage from a suture line, accidental soiling of clean surfaces from a local suppurative process, such, for instance, as an appendiceal abscess, or less frequently, accumulations of bile or possibly urine. The extent and severity of peritoneal reaction to such sources of contamination will vary widely, a fact known to every experimental worker with peritonitis who has tried to establish a lethal standard of this disease. Clinically we have no way of anticipating the nature of the reaction of the peritoneum to accidental soiling. One patient may develop a fatal diffuse peritonitis following what would apppear to be a clean cholecystectomy, while another will show but little reaction to gross soiling from an accidentally ruptured abscess. In one instance operative peritoneal soiling may produce a localized inflammatory process, in another spreading infection may result. In one instance an apparently benign source of contamination may produce a thin, scanty, fibrin-free exudate, with rapid spread not only over peritoneal surfaces, but also above the diaphragm. In other instances a bulky, fibrinous exudate that taxes the absorptive capacity of the peritoneum will result in a less widespread, and hence more benign type, of infection. Therefore, we are never safe in assuming that we can exclude postoperative peritoneal infection, because we have not consciously permitted any peritoneal soiling.

The nature of the reaction of clean or uninflamed serous membrane in the immediate vicinity of a suppurative process is a familiar phenomenon. This reaction consists of a sterile serous effusion. Thus, acute osteomyelitis of the long bone produces effusion into adjacent joints. A completely isolated appendiceal abscess produces a serous effusion, so-called "free fluid" in the unaffected peritoneum. Subphrenic space infection produces a pleural effusion on the same side. Peristing sub-phrenic abscess may ultimately result in empyema on the same side, but rarely is followed by pneumonia. On the other hand, in both experimental animals and in man practically every serious or fatal diffuse peritonitis will produce a varying extent of pulmonary consolidation. Micro-organisms are capable of invading the pleural sac by direct extension through the diaphragm and also by extension from the mesenteric lymphatics to the mediastinal and peri-bronchial lymph nodes. This has been repeatedly demonstrated experimentally by the intraperitoneal injection of suspensions of pigment and by the demonstration of pigment particles in mediastinal lymph nodes. Hence, pleural effusion or suppuration would appear to follow by direct extension or by contiguity of tissue through the diaphragm, whereas diffuse infections of the peritoneum are transmitted by way of the deep lymphatics. We have been particularly sure of the latter statement, first, because we have observed pulmonary complications following diffuse peritoneal infection that did not involve the diaphragm, and second, pulmonary lesions secondary to peritonitis are patchy in type and frequently bilateral. In virulent diffuse peritonitis the infection spreads rapidly over visceral and parietal surfaces, particularly when the exudate is either scanty or thin and watery. Widespread involvement of peritoneal surfaces will commonly occur within seventy-two hours from the time of initial contamination. There is evidence from clinical observation that extension to the lungs, when it does occur, will be found in this period of time and too frequently the clinical signs of such pulmonary involvement are found while the underlying peritoneal involvement is still unsuspected.

These pathologic and clinical observations support the many experimental studies that have been made on the function of peritoneal absorption. It is known, for instance, that crystalloid solutions are absorbed more rapidly than colloids and are taken up by the blood stream. Colloids or albuminous solutions or suspensions of particulate matter, of which pus is a good example, are absorbed by the abdominal lymphatics. While inflammation slows the rate of

absorption from the peritoneum, in virulent infections the exudate is often thin, due to scantiness or absence of fibrin. In the early stage or invasion period of spreading peritonitis there is less fibrin than in the later stages when the rate of absorption is slowed and when clinical improvement can be looked for. But it is during this invasion period when protection from fibrin is lacking that organisms most readily find their way into the abdominal lymphatics. Neither experimental or clinical observation will permit the assumption or conclusion that pneumonia following peritonitis is embolic, because of the fact that the early absorption of colloids during inflammatory reactions is by way of the lymphatics and not by way of the blood stream. This fact is borne out clinically by the diffuse character of the pneumonia that is found to complicate spreading peritonitis.

There are two chief reasons for failure promptly to recognize postoperative peritoneal infection. First, as previously indicated, the invasion period is apt to be masked; second, both pneumonia and diffuse peritonitis have in common such symptoms as pain, fever, tachycardia, accelerated respirations, distention and anoxia. If we are not sufficiently careful, we may accept the lesion above the diaphragm as adequately explaining the clinical picture. Every patient who has a stormy first forty-eight or seventy-two hours following abdominal surgery should be considered as suffering from peritoneal contamination and infection until diagnosis can be excluded. A pulse rate which stays persistingly high on the days succeeding operation, particularly if the pulse rate be in excess of that usually accompanying the temperature elevation, is always suggestive. During this invasion period no one sign, in the opinion of the writer, is quite so significant as a rapidly falling urinary output. In our own experience, the combination of persistingly high pulse rate and scanty urinary output, or suppression, is strongly suggestive of spreading peritoneal infection. Excessive pain and exquisite tenderness are helpful signs. If, in addition, there is vomiting or if an indwelling stomach tube indicates a twenty-four hour retention of a litre or more, we have strong evidence of spreading peritonitis. In our experience rigidity has not been a reliable early sign of postoperative peritoneal infection. Paralytic ileus, while commonly present in the later stages of the disease, during the invasion period will frequently not be sufficient to cause pronounced distention and during this period often will be only detected by means of a scout film of the abdomen, but the presence of pulmonary findings in the first seventy-two hours should lead us to a deliberate study of the abdomen to avoid overlooking a masked peritoneal infection, from which this pneumonia took origin. Slight pulmonary changes, accompanied by a stormy course always suggest that the pulmonary lesion is not the chief source of trouble. We have, of course, seen postoperative pneumonias in which the subsequent course of the patient never enabled us to detect evidence of peritonitis. But even in such cases I am never quite convinced that a peritonitic area is not present.

It may be argued that the foregoing discussion is purely academic; that the source or origin of the pneumonia is not of major importance; and that no fundamental change in therapeutic attack is indicated. It is important to recall that the mechanism of death in widespread peritonitis is toxic absorption from the peritoneal membrane itself. It is granted, of course, that increased avenues of absorption, such as the lungs, materially add to the hazard, but it has been our experience that if the peritoneal situation is not serious, it is not likely that pneumonia will be the cause of death.

The treatment of diffuse peritonitis does not fall within the scope of this paper; furthermore, the principles of management are sufficiently well known. In previous papers we have called attention to the definite operative limitations in the treatment of postoperative diffuse peritonitis. It is often neither feasible or advantageous to re-open an abdomen when accidental infection of the peritoneum follows surgical procedures upon the gastrointestinal tract. Nevertheless, the increasing number of favorable reports upon the action of sulfathiazol indicate that we have a valuable offensive weapon in the treatment of this disease. But it is imperative that such treatment be instituted early.

A few words concerning the use of sulfonilamide compounds in diffuse peritonitis may not be amiss. The diminished absorptive capacity of the peritoneum in the presence of peritonitis applies far more to the colloid solutions than to crystalloids. The latter, even in the presence of widespread infection with a bulky exudate, are promptly absorbed, as evidenced by the presence of dextrose in the urine within five minutes after intra-peritoneal injection. Therefore, two facts pertinent to the intra-peritoneal use of these compounds should be emphasized.

First, because of its rapid absorption by the peritoneum, the local action of these drugs is far too transient to offer any advantages over parenteral administration. Second, a maximum blood level will be reached within a few hours, and there is just as much danger of over-dosage from intra-peritoneal use as from intravenous administration. The dumping of twelve or sixteen grams into the peritoneum immediately before closure, in the opinion of the writer, is a dangerous procedure. Absorption from peritoneal abscess, however, is very slow, and in these lesions the local action of the drug may be prolonged for days. In diffuse infection, my own preference is for intravenous administration.

By way of summary, it is pointed out that when signs of pneumonia and a stormy course appear in the first seventy-two hours after operative work upon the gastrointestinal tract, it will be safer and usually more accurate to assume that spreading peritonitis and not pneumonia is the major complication.

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WAR CASUALTIES AT PEARL HARBOR

The experiences gained from the handling of the wounded at Pearl Harbor on Dec. 7, 1941 will undoubtedly exert a definite influence on the further progress of treatment of war casualties, *The Journal of the American Medical Association* for December 12 declares in an editorial summarizing a symposium in the September-October issue of the *Hawaii Medical Journal* on the disposition of the wounded there on "Jap Sunday."

Regarding the symposium, *The Journal* says that "The authors and discussers were chosen from among those present and active on December 7, so that only first hand experiences are reported."

Lieut. Col. A. W. Spittler, in his discussion of the treatment of war wounds, stressed two principles, namely the thorough debridement or removal of all foreign matter and tissue immediately surrounding a wound, including all dead tissue in the vicinity, and subsequent open treatment. *The Journal* reports that it was his impression that the local use of a sulfonamide powder combined with administration of the drug by mouth, injection into a vein or beneath the skin had much to do with the reduction in the incidence of infection in wounds.

"Gas gangrene," *The Journal* says, "was combated by secondary debridement, a sulfonamide locally and generally, and x-ray irradiation. Commander Downes thought that the role of the sulfonamides in securing the amazing results was probably exaggerated. Many other favorable factors existed. The patients were a selected group of healthy young men in excellent condition and exceedingly well nourished. This being Sunday morning, they were clean, rested and not exhausted. In addition, the cases were treated by extremely competent and well trained surgeons. . . .

"In the treatment of shock, as outlined by Lieut. Col. C. T. Young, modern concepts of shock and shock therapy were successfully applied. These consisted of early treatment, even in the absence of clinical signs of shock. . . . The highest mortality rate came from abdominal wounds. However, about 50 per cent of these patients for whom operations was possible survived. The improvement in the rate of survival, as compared to the injuries to the gastrointestinal tract in the first world war, was probably due to the liberal employment of the sulfonamides intraperitoneally and orally. . . . Dr. J. E. Strode, in the discussion of chest wounds, emphasized in the importance of the first aid treatment of the sucking wounds of the chest. The hole is to be plugged immediately by almost any

method at hand. . . . Dr. R. B. Cloward outlined a rather conservative therapy for head injuries. . . . Morphine or other narcotics should never be given to a patient with a head injury. . . ."

Among the points regarding fractures contained in *The Journal* summary of the symposium is the statement by Lieut. J. D. Macpherson that because of the frequent necessity of transferring patients to the mainland open operation was favored in correcting the fracture.

"Lieut. Com. P. C. Spangler," *The Journal* continues, "points out that in burns it is important to treat the patient first for pain, anxiety and beginning shock. In the treatment of lesions, attempt is made to convert a soiled wound into a clean, aseptic wound. The burned area is washed with soap and water, debrided and sprayed with freshly prepared 10 per cent tannic acid solution, followed ten or fifteen minutes later by swabbings with 10 per cent silver nitrate solution. No dressings were applied. . . . For hands, feet, face and genitals 1 per cent sulfanilamide and petrolatum was used. Spangler expresses the opinion that this is perhaps the most satisfactory way of handling a large group of burns. Lieut. Com. Joseph Palma described the syndrome of blast injury of the lungs and of the abdomen. . . . He advises that in all war casualties, regardless of the type of injury produced, if there has been exposure to the detonation of high explosives, the integrity of the chest should be ascertained by x-ray examination, because general anesthesia is contraindicated when there is blast injury of the lungs. Oxygen is life saving and should be administered continuously. . . .

"It is gratifying, indeed, to learn that the Army, the Navy and the civilian medical personnel proved equal to the great emergency and delivered a service of the most advanced type. This symposium will undoubtedly exert a definite influence on the further progress of therapy of war casualties."

A RECOMENDATION

Note from one colleague, F. L. Washington, to another

To whom it may concern:

Mrs. Fanny Match has been in my employ for the past five and a half years and I am pleased to recommend her to any one needing an efficient secretary proficient in the following:

1. Diagnosis and treatment of mentally ill patients (this is particularly helpful during duck hunting season).
2. Ability to tell you what to do and when to do it.
3. Bouncer for all drug detail men and other undesirable individuals who take up your time.
4. Very good at convincing your patients you are not in even though you might desire to see them.
5. Answer all telephone calls and takes all messages which she transmits to you at her convenience, which usually is within the week at least.
6. Snippy to everyone, including yourself, but this is desirable as it keeps you very much on your toes at all times.
7. Takes dictation when it suits her mood and transcribes it at her leisure.
8. Does the bookkeeping in such a manner that no one knows what is going on — this is particularly helpful at income tax times.
9. Filing is taken care of so expertly that no one is ever able to find anything so we need not spend the time looking for any records.
10. Never expects to have more than 15 minutes for lunch and is only happy when working long after everyone else in the office has left for home.

Ten very good reasons why you should grasp the opportunity to have Mrs. Match in your employ and I trust you will be able to make her a sufficiently attractive offer so that I need not worry about ever having to see her again when I return from the wars. Incidentally, the rest room must be very handy if you are not to lose too much of her valuable time. J.A.M.A.

Honor Role

The list of names following are the physicians of Illinois now in the various branches of our armed forces. This list has been compiled from various sources and as a consequence, may not be entirely accurate. All names may not have been reported, especially names of physicians who are not members of the state society. It would be of much assistance if all readers of the Journal would check over this list and report corrections of any kind to the office of Dr. Harold M. Camp, Secretary, Monmouth, Illinois. Assistance in keeping our honor roll of physicians correct during this emergency is sincerely appreciated.

BY NAME AND COUNTY

Aagesen, Walter J., Knox
Aaronson, Abe L., Cook
Abbott, Gordon, Kane
Abbott, O. L., McLean
Abel, Stuart, Cook
Abelson, S. B., Cook
Abraham, Raymond L., Cook
Abrams, Benjamin, Cook
Abrams, Jack S., Cook
Abrams, Raymond H., Cook
Abt, Arthur F., Cook
Adams, Carroll O., Cook
Adams, J. E., Coles-Cumberland
Adams, Vail B., Cook
Adams, William E., Cook
Adamson, G. Norman, Cook
Adelman, Milton H., Edwards
Adelman, Robert, Richland
Adler, Edmund R., Cook
Adler, Samuel, Ogle
Afremow, Melvin L., Cook
Agate, George H., Cook
Aguila, Fernando I., Cook
Ahern, William T. A., Cook
Ahlm, Charles E., Cook
Ahnfeldt, Arnold L.
Ahroon, C. R., McLean
Aison, Emil, Cook
Ajalat, M. P., Cook
Akner, Frank J., Cook
Akre, Osmund H., Shelby
Albaum, Joseph, Cook
Albers, E. A., Will
Albin, Meyer S., Saline
Albrecht, Armand D., Cook
Albus, William R., Cook
Alderson, C. F., St. Clair
Alesi, Joseph J., Cook
Alexander, Howard G., Cook
Alexrod, Louis, Cook
Alford, Frank L., McHenry
Allaben, Gerald R., Cook
Allegretti, J. E., Cook
Allen, Glen I., Peoria
Allen, Harvey S., Cook
Allen, Hubert L., Madison
Allen, John B., Cook
Allen, Robert A., Cook
Allers, William D., Cook
Allerton, Roy Perry, Kane
Allison, Charles, Kankakee
Allison, O. W., Vermilion
Altman, H. P., McHenry
Alvis, W. P., Cook
Amberson, Julius M., Cook
Ambrose, Stephen H., Moultrie
Andelson, Mayo M., Cook
Anderson, Donald, Jefferson
Anderson, Donald W., Cook
Anderson, E. G., Winnebago
Anderson, Kenning M., Cook
Anderson, Perry, Winnebago
Anderson, Robert K., Cook
Anderson, Russell E., Calhoun
Anderson, Stanley, Winnebago
Anderson, W. J., Johnson
Andrews, Albert H. Jr., Cook
Ankner, Frank J., Cook
Anslinger, Cyril, Jefferson
Anspaugh, F. E., Macoupin
Anten, Hanford L., Cook
Anthony, Paul K., Cook
Appel, Ben Arthur, Cook
Appel, Simon E., Cook
Arends, G. W., Sangamon
Arenson, Gene J., Cook
Arenstein, Marvin Wm., Cook
Argent, Albert H., Lee
Aries, Leon J., Cook
Arlon, Ary J., Cook
Armalavage, Leon J., Cook
Armington, Frederick W., Cook
Armstrong, R. C., Champaign
Arnal, Paul J., Cook
Arnold, Sherman C., Cook

Arnoff, Joseph, Tazewell
Aron, Benedict, Cook
Arnow, Julius, Cook
Ascher, John P., Cook
Ash, Alfred S., Adams
Ashby, John S., Cook
Ashley, Franklin L., Cook
Ashley, Paul, Cook
Ashley, Richard W., Cook
Ashworth, A., Union
Ashworth, John, Cook
Athey, George L., Adams
Atlas, Donald H., Cook
Augenlicht, Jacob C., Cook
Austin, Fletcher, Cook
Austin, John O., Cook
Austin, Marvin F., Cook
Auten, Hanford L., Cook
Axelrod, David, Peoria

Backer, Meyer, Cook
Baer, Walter H., Peoria
Bagnuolo, Anthony, Cook
Bailey, John Milton, Cook
Bailis, J. M., Pike Co.
Baird, B. M., St. Clair
Baker, Alonzo N., Williamson
Baker, Edwin F., Lee
Baker, Eugene L., Cook
Baker, Frank M., Macon
Baker, Lyle L., Madison
Baker, Norman L., Cook
Baker, Philip M., Cook
Baker, Wm. J., Cook
Balding, B. N., Kane
Baldree, C. E., St. Clair
Ball, Fred E., Cook
Ball, O. H., McLean
Ball, Wilber G., McLean
Ballard, George P., Cook
Ballin, Michael, Cook
Ballou, John W., Schuyler
Bancroft, Burton R., Cook
Banick, Thomas J., Cook
Banks, Samuel W., Cook
Banton, Huston J., Mason
Barak, Herbert G., Calhoun
Baranov, Lester J., Cook
Barber, Albert C., Cook
Barber, H. C., McLean
Barber, Kent W., Adams
Barber, Knowlton E., Cook
Barbour, B. H., Marion
Bard, Eli, Cook
Bard, G. W., Iroquois
Barion, Evan M., Cook
Barker, Douglas C., Cook
Barker, M. Herbert, Cook
Barkett, Soddie J., Alexander
Barnard, Robert D., Cook
Barnett, Andrew F., Franklin
Barnett, Harry E., Cook
Barnett, Harry J., Cook
Barone, Andrew M., McLean
Barrick, Lewis E., Cook
Barrick, Robert G., Cook
Barringer, Donald M., Logan
Barron, Charles I., Cook
Barron, Elmer S., Cook
Barry, Fravel S., Cook
Barryte, Lucien E. Jr., Cook
Barter, Robert H., Cook
Barth, Earl E., Cook
Barthelme, F. L., Effingham
Barthes, Frederic E., Cook
Bartlett, I. E., Lee
Bartling, C. H., Winnebago
Barton, E. C., LaSalle
Barton, E. L., Jackson
Barton, Evan M., Cook
Barton, Harry L., Cook
Barys, Harold J., Cook
Baskerville, Edward M., Will
Bass, Howard H., Cook
Bateman, M. A., Clinton
Bates, Alvin F., Cook
Bates, Robert R., Will
Battaglia, Samuel, Cook
Batty, John L., Cook
Bauer, Carroll A., Adams
Baugher, J. C., Cook
Baugher, John O., Cook
Baum, Hugo C., Cook
Bauman, C. H., St. Clair
Baxley, H. W., Cook
Baxter, Edward S., Cook
Baxter, Raymond E., McLean
Bay, Anthony, Cook
Baylin, Felix R., Cook
Bayliss, Milward W., Cook
Bazell, Sidney R., Cook
Beahrs, Oliver H., Cook
Beasley, C. H., St. Clair
Beaton, Jas. H., Cook
Beaton, Lindsey, Cook
Beatty, Jackson D., Grundy
Beazell, James M., Cook
Beck, William C., Cook
Becker, C. M., Stephenson
Becker, Harry G., Lake
Becker, Maurice L., Cook
Beckette, Edmund S. Jr., St. Clair
Bedard, Robert E., Kankakee
Bedessem, Philip M., Cook
Bedinger, Paul L., Cook
Beebe, Norman S., McLean
Beecher, Merrill C., Knox
Behr, Samuel, Winnebago
Behrens, W. H., St. Clair
Beinar, Peter J., Cook
Bell, A. J., Rock Island
Bell, Charles, St. Clair
Bell, Donald I., Cook
Bell, Julius N., Cook
Bell, William P., Cook
Belmonte, John V., Cook
Bendix, Richard M., Cook
Bengtson, B. N., Cook
Benjamin, Eustace L., Cook
Bennett, D. A., Fulton
Bennett, Edward R., Crawford
Bennett, Joseph R., Cook
Berchtold, H. F., Sangamon
Berg, George, Cook
Berg, Max, Cook
Bergen, Samuel, Will
Berger, Irving R., Cook
Berger, Samuel, Cook
Berke, A. N., Lake
Berke, Robert, Cook
Berkelhamer, Ralph C., Cook
Berman, Alex Martin, Cook
Berman, Benjamin B., St. Clair
Berman, Harry L., Peoria
Berman, Peter, Winnebago
Bernard, William R., Sangamon
Berns, Robert, Vermilion
Bernstein, Alexander, Cook
Bernstein, Max M., Cook
Bernstein, Morley, Cook
Bernstein, Theo. B., Cook
Bersack, Solomon R., Cook
Bertucci, Joseph A., Cook
Berwick, Philip, Cook
Bewersdorf, Herman L., Cook
Beyer, William S., DeKalb
Bianco, Peter B., Cook
Bica, Gaetano, Cook
Bickerman, Raymond J., Peoria
Biddlecomb, Duncan, Shelby
Bidwell, Charles L., Cook
Bielinski, Brunon, Kankakee
Bielinski, Stefan, Cook
Bigler, John A., Lake
Bilek, George J., Cook
Binder, Paul, Cook
Binswanger, Herbert F., Cook
Birchwood, Eugene, Cook
Bird, Lee C., Cook
Birnbaum, Leo, Greene
Bittner, William A., Edgar
Black, Arnold, Cook
Black, Benjamin S., Franklin
Black, Sidney, Cook
Blackard, Wm. J. Jr., Saline
Blackwell, Claude C., Cook
Blades, James E., Champaign
Blana, George C., Cook
Blair, John E., Cook
Bland, Leland J., Ford
Blair, E. H., Cook
Blatchford, Frank W., Cook
Blaufuss, Armin L., Kane
Blaurock, Melvin F., Cook

Blech, Joseph, Cook
Bleier, Robert S., Cook
Blender, William Jr., Peoria
Blesse, Frederick, Kane
Blesse, Henry S., Cook
Blier, Zachary A., Cook
Block, Arnold S., Cook
Block, Benjamin S., Cook
Block, Walter E., Cook
Blocksom, B. H., Winnebago
Bloom, Charles R., Cook
Bloomenthal, Ernest D., Cook
Bloor, Robert J., Cook
Blumenfeld, Irving H., Cook
Blumenstock, Julius, Cook
Blustein, Herman, Cook
Bobrow, Leon B., Cook
Bock, Walter A., Cook
Bockoven, Harold D.
Boehm, William F., Cook
Boeke, Emmert, Stephenson
Boethe, Russell T., Cook
Bogardus, Geo. M., Cook
Bohan, J. E., Stark
Bohan, John L., Cook
Boice, William C., Cook
Boike, Wilbur E., Cook
Boland, J. D., Whiteside
Boland, John E., Cook
Boland, John P., Cook
Boland, Joseph J., Cook
Boller, Galen C., Cook
Boles, Donald ., Cook
Bolman, Ralph M., Cook
Bolton, Wm. W., Cook
Bomze, Edward J., Cook
Bond, C. Spencer, Ogle
Bone, James H., Cook
Bonick, Thomas J., Cook
Bonnell, Ellis, Champaign
Boon, C. U., Kane
Boone, Charles L., Cook
Borin, George M., Peoria
Borkon, E. L., Jackson
Bornemeier, Walter C., Cook
Bornstein, Johann S., Cook
Boros, Eugene J., Moultrie
Boros, Harold H., Cook
Boshes, Benjamin, Cook
Boshes, Louis D., Cook
Boswell, C. H., Winnebago
Bothe, Russell T., Kane
Bourke, Henry P., Greene
Bousfield, M. O., Cook
Bouyer, Harsna F., Cook
Bovik, Leslie E., Lake
Bowen, Robert E., Cook
Bowen, Wilbur L., DuPage
Bower, Willis H., Cook
Bowers, Daniel E., Peoria
Bowers, Paul A., Cook
Bowes, Leon M., Cook
Bowler, Vincent B., Cook
Bowman, H. O., Mason
Bowman, Howard O., Cook
Bowman, Harold S., Morgan
Bowman, Harry R., DuPage
Bowman, J. A., Knox
Boyd, Douglas, Lake
Boyd, John R., Cook
Boyd, Olin B., St. Clair
Boyd, Robert T., Cook
Boyer, Richard C., Cook
Boyer, Ulysses S., Rock Island
Boykoff, Max P., Cook
Boylan, Charles E., Cook
Boylson, Myron I., Douglas
Boylston, George A., Cook
Boynton, M. W., Cook
Boyer, Richard C., Cook
Boysen, Harry, Cook
Braceland, Francis J., Cook
Bracken, Frank L., Cook
Brackin, Roy Ernest, Cook
Bradburn, George B., Cook
Bradburn, H. B., Logan
Branch, Charles D., Peoria
Brandstadt, Wayne G., Cook
Braude, Abraham I., Cook
Braun, Leonard L., Cook
Braze, Alexander, Winnebago
Breck, Merrick R., Cook
Brennan, Francis J., Bureau
Brennan, John, St. Clair
Brennan, Robert V., St. Clair
Brenner, Frank Jr., Adams
Brennon, John F., Grundy
Breslin, Winston, Cook
Breslow, Lawrence, Cook
Breuhaus, Herbert C., Cook
Brewer, John I., Cook
Brewey, Lewis R., Cook
Brill, Harold M., Cook
Brill, Isidore, Champaign
Brislen, Andrew Jackson, Cook
Britton, J. H., Rock Island
Broadbent, LeRoy V., Cook
Brobst, C. D., Kane
Broccolo, Frank J., Cook
Brochus, Charles E., Cook
Brock, Clayton E., Lake
Brock, Samuel, Cook
Brodsky, Abraham, Kankakee
Brodt, Leonard P., Cook
Brogan, Austin J., McLean
Brooks, L. C., Stephenson
Brosin, Henry Walter, Cook
Brosnan, John J., Cook
Brotman, David M., Cook
Brott, E. W., Stephenson
Brouse, Ivan, Morgan
Brown, Arthur W., Cook
Brown, Aubrey K., Cook
Brown, Bruce M., LaSalle
Brown, Carroll A., Logan
Brown, C. David, Cook
Brown, David, Kankakee
Brown, Edgar O., Cook
Brown, Francis, Douglas
Brown, Francis J., Macon
Brown, Gordon, Cook
Brown, Ira, Cook
Brown, Jack, Macon
Brown, King D., Cook
Brown, Mercer T., Lake
Brown, Meyer, Cook
Brown, R., Cook
Brown, S., Rock Island
Brown, Seymour, Cook
Brown, William J., Cook
Brown, W. W., Madison
Browne, Freeman, Cook
Brownstein, Stanley, Cook
Brubaker, Donald L., Montgomery
Bruno, Nicholas J., Cook
Brunner, Matthew, Cook
Brust, Edmund G., Cook
Bryan, Fred M., McLean
Buchanan, Donald L., Cook
Buchholz, Alexander M., Cook
Buckley, Joseph H., Cook
Buckley, Mortimer, Will
Buckner, R. A., Iroquois
Buczynski, C. C., Cook
Buehrig, Robert C., Tazewell
Bufkin, Lindley L., LaSalle
Bulfer, Andrew F., Cook
Bullock, N. C., Winnebago
Bullock, W. K., Cook
Bullock, Weldon K., Edwards
Bunata, Emil L., Cook
Bunchmen, L. P., DeWitt
Burack, Samuel, Kankakee
Burckart, Glenn A., Cook
Burgess, J. P., Rock Island
Burianek, John F., Cook
Burke, A. N., Lake
Burke, Edmund James, Cook
Burke, Jerome J., Cook
Burke, John Vincent, Cook
Burket, Walter C., Cook
Burkhart, George, Franklin
Burley, R. D., Cass
Burns, Edward M., Stephenson
Burns, G. T., Winnebago
Burroughs, Oscar J., Cook
Burt, Elliott P., Peoria
Burten, Saul, McHenry
Burton, S. D., Cook
Busch, Robert C., Cook
Bushnell, Lowell F., Lake
Butkus, Walter, Cook
Butner, Wendell B., Cook
Butt, Arthur J. Jr., Cook

Buttemiller, George, Lake
Byfield, George V., Cook

Cada, Edward G., Cook
Cahan, Aaron S., Cook
Cain, Cornelius R., Cook
Calams, James A., Cook
Calasio, R. T., Will
Cameron, Don S., Cook
Cameron, Wayne F., Cook
Cameron, William G., Cook
Cammerer, H. R., Cook
Camp, Edward H., Cook
Campbell, E. D. Clay
Campbell, E. W., Cook
Campbell, James B., Cook
Campbell, Paul A., Cook
Campbell, Rex S., Sangamon
Campbell, W. W., Cook
Canfield, Bruce, Winnebago
Canfield, Burt, Winnebago
Cannon, Edward E., Cook
Cannon, Vern E. Jr., Macon
Cant, John F., Cook
Caporale, Frank S., Cook
Capos, N. J., Cook
Capps, Richard B., Cook
Carey, C. K., Schuyler
Carlin, George W., Will
Carlo, Joseph F., Cook
Carlson, E. E., Cook
Carman, Henry F., Cook
Carney, Paul W., DeKalb
Carney, T. B., Henry
Carofiglio, L. E., Cook
Carpenter, M. G., Kane
Carroll, P. J., St. Clair
Carstens, Herman P., Cook
Carter, C. L., LaSalle
Carter, Kenneth L., Coles
Casberg, Melvin A., Cook
Cascino, J. P., Cook
Case, John B., Cook
Casey, Emmet F., Cook
Cassel, Melvin A., Madison
Cassidy, Harold B., Cook
Castaldo, E. F., Cook
Castro, Cosimo, Cook
Caul, Charles J., Cook
Cavins, Elmer W., Cook
Ceaser, Leonard S., Cook
Cecala, Philip J., Wennebago
Cella, Louis E., Cook
Cenedella, Francis J., Rock Island
Cesare, Anthony G., Cook
Chabner, Louis, Shelby
Chambers, William F., Cook
Chandler, James B., Livingston
Chapman, Henry I., Cook
Chardkoff, M. Austin, Cook
Chechile, D. T., Cook
Chelnek, Irving, Perry
Cherner, A. M., Cook
Cherney, Louis E., Cook
Chesnut, N. H., Sangamon
Chevatal, Herbert F., Cook
Childs, Barton, DuPage
Childs, T. B., Cook
Chinn, Herman, Cook
Chione, A. G., McLean
Chobot, George R., Cook
Choisser, John Elder, Saline
Chor, Herman, Cook
Chornyak, John, Cook
Choy, James K. L., Cook
Christensen, F. A., Peoria
Christenson, A. W., Winnebago
Christie, Geo. C., Cook
Christie, J. B., Champaign
Christman, Edmund E., Cook
Christoph, Robert F., Cook
Christy, Harold W., Cook
Chrzan, Thaddeus J., Cook
Chung, Joseph T., Cook
Chwatal, Herbert F., Cook
Ciavirella, J. A., Cook
Cilella, S. G., Cook
Cirrincione, F. A., Cook
Citron, Robert R., Peoria
Ciulini, F., Cook
Clancy, Edward J., Cook
Clark, Carl E., DeKalb
Clark, James W., Cook
Clark, John S. Jr., Stephenson
Clarke, Roger G., Richland
Clarke, T. H., Cook
Clotfelter, D. W., Montgomery
Claycomb, Arnold H., Woodford
Clayton, F. K., Fulton
Cochems, Kenneth D., Cook
Cochran, T. H., Cook
Cocuzzi, Frank A., Cook
Cody, George L., Williamson
Coen, Hardin E., Cook
Coggeshall, Chester, Cook
Cohan, Albert, Cook
Cohen, A. E., Peoria
Cohen, Adrain, Cook
Cohen, Benjamin, Cook
Cohen, Bernard L., Cook
Cohen, Bernard, Cook
Cohen, Carl, Cook
Cohen, Frank, McLean
Cohen, George L., Tazewell
Cohen, Hyman, Cook
Cohen, Jacob, Madison
Cohen, Melvin R., Cook
Cohen, Morris D., Randolph
Cohen, Robert A., Cook
Cohen, Theo. M., Cook
Cohen, William, Cook
Cohenour, Robert E., Will
Cohlan, Wilbur R., Cook
Cohler, Bernard E., Cook
Cohn, Arnold M., Christian
Cohn, Clarence, Cook
Cohn, Isadore H., Cook
Cohn, Robert D., Cook
Cohrs, Clarence C., Cook
Cole, Thomas J., Cook
Coleman, C. C., Cook
Collings, M. M., Fayette
Collins, Harold J., Hancock
Collins, John J., Cook
Collins, Nathan P., Kane
Collins, R. Bruce, Rock Island
Collins, Thomas J., Cook
Comer, Fay S., Alexander
Comess, Oscar, Cook
Compton, M. A., Peoria
Comroe, Leon B., Cook
Concannon, L. P., Cook
Condon, John B., Cook
Coniglio, Bernard L., Cook
Conklin, C. A., McLean
Conklin, James O., Edgar
Conley, Arthur H., Cook
Conley, John A., McHenry
Conley, Thomas Jr., Cook
Conley, R. H., Cook
Conley, Thomas J., Cook
Conlin, Edward J., Cook
Conner, James A., Cook
Conti, James G., Cook
Conway, John F., Knox
Conway, Joseph, Cook
Cook, George A., Rock Island
Cook, Mario V., Cook
Cook, Richard S., Cook
Cooley, Wm. Jr., Peoria
Cooper, George J., Cook
Cooper, Leo K., Cook
Cooper, William H., Champaign
Cooperman, Myer, Adams
Cooperman, Norman R., Cook
Copeland, W. J., McHenry
Corbin, J. J., Madison
Corboy, Philip M., Cook
Corbus, Bud C. Jr., Cook
Cordonnier, J. J., Washington
Cortesi, L. R., Cook
Costigan, C. S., Rock Island
Costin, Max, Cook
Cottam, Alma, Cumberland
Coulen, Edward J., Cook
Countryman, H. D., Winnebago
Cousens, Marshall A., Cook
Covode, W. M., Vermilion
Cowen, Jack, Cook
Cox, E. H., Logan
Cox, Fred G., Cook
Coyle, Joseph T., Cook
Coyne, Albert D., Cook
Crabtree, Joseph P., DuPage

Crandle, Ellis R., Iroquois
Crane, Cyril V., Cook
Crawford, Paul M., Cook
Cress, Henry N., Cook
Crismon, Lester C., Cook
Crohn, Nathan N., Cook
Cronin, John J. Jr., Cook
Cross, James H., Cook
Cross, R. R. Jr., Hamilton
Crost, Edwin A., Cook
Crotty, John P., St. Clair
Crout, G. T., Livingston
Crowder, Earl R., Cook
Crowley, Edward X., Cook
Culhane, T. Harry, Winnebago
Culmer, Charles U., Cook
Cumming, Thomas S., Kane
Cummins, George M. Jr., St. Clair
Cunningham, Glenn D., Rock Island
Cunningham, J. J., Cook
Curtis, Geo. C., Cook
Curtis, J. S., Vermilion
Curtis, William W., Cook
Cutts, Robert I., Cook
Czaja, Zenon G., Cook
Czerwinski, Anthony, Sangamon
Czwalinski, Peter, Cook

Dado, Albert P., Cook
Dahl, John J., Cook
Dahlberg, A. Z. Jr., Cook
Daiell, Saul Sheldon, Cook
Dailey, Paul A., Greene
Dalitsch, Walter Wm., Cook
Dallenbach, John C., Champaign
Daly, Philip A., Cook
Danelius, Gerhard, Cook
Danishek, Emil S., Cook
Darnall, William R., Cook
Daro, August F., Cook
Dashiel, Grayson F., Cook
Daskal, Herzl M., Cook
Davenport, Harold A., Cook
David, Charles B., Cook
Davies, R. E., Bureau
Davis, Alexander H., Cook
Davis, E. S., Boone
Davis, James W., Franklin
Davis, John L., Adams
Davis, Landis Y., Pike
Davis, Loyal, Cook
Davis, Robert C., Cook
Davis, Thornton A., Cook
Davis, W. J. N. Jr., Cook
Dawson, D. T., Vermilion
Dawson, Percival G., Boone
Day, Howard, Lake
Day, Lawrence C., Lake
Day, L. E., Cook
Day, Robert F., Cook
Dean, R. K., Peoria
Dearborn, R. F., Ogle
Decker, Virgil O., Massac
DeCosta, Edwin J., Cook
DeFeo, Herman F., Cook
DeFrancois, Walter, Cook
DeFrancois, Walter, Cook
Dehnert, Ernest F., Cook
DeLeon, Fernando, Cook
Delicate, William E., Madison
DeLozier, Leonard C., Cook
Demarsh, Qunicy B., Cook
Denenholz, Edward, Cook
Dent, Roy F., Cook
Denyes, O. L., Kankakee
Denyse, Walter J., Cook
DePeyster, Frederic, Cook
Deplewski, Leo Mark, Cook
DePinto, Dominic A., Cook
Des Rochers, Jean B., Vermilion
DeSilva, E. B., Rock Island
Dessen, Samuel, Cook
DeTarnowsky, George O., Cook
DeTrana, Frank A., Cook
Dettman, E. F., Boone
Deuterman, Joel L., Kane
Deutsch, Hans, Cook
Deutsch, Harry L., Cook
Deutsch, J. B., Cook
Devitt, Robert E., Cook
DeVries, Jerry, LaSalle
Dew, Walter A., St. Clair
DeWeerd, James H., Cook
Dewhirst, E. M., Vermilion
Dexheimer, H. P., St. Clair
Diamond, Jack L., Cook
Diamond, Leon S., Ford
Diamondstone, Albert, Cook
Dick, Donald, Kane
Dickerman, H. S. Jr., Sangamon
Dickey, M. M., McHenry
Dietrich, Edwin F., Vermilion
Diffenbaugh, Willis G., Cook
Diffenderfer, Ralph, Cook
Digate, Jacob C., Cook
Diggs, Arthur E., Cook
Dillman, H. B., Clay
Dillon, Walter F., Cook
Dimiceli, Salvatore A., Cook
Ditkowski, Sol, McLean
Dixon, Charles H., Winnebago
Dixon, Harold, Winnebago
Doan, Howard W., LaSalle
Dobin, Louis, Cook
Dobin, Norman B., Cook
Doering, Peter J., Henry
Doescher, Paul F., Cook
Doherty, Chester C., Cook
Doktorsky, Abraham I., Cook
Dolan, P. T., Pike
Dollear, Henry A., Morgan
Dolph, I. E., Mason
Dominsky, Anthony V., Cook
Domke, Delmar E., Lake
Donahey, Victor V., DeKalb
Donlon, Francis P., Cook
Donlon, John J., Cook
Donovan, R. F., Iroquois
Dooley, Samuel, McLean
Doolittle, John W., Cook
Doretti, Peter J., Cook
Dorsey, Dennis B., Cook
Dorton, Howard E., Cook
Doud, Ernest A., Cook
Doud, R. W., McLean
Douglas, Frederick W., Calhoun
Douglas, W. T., Montgomery
Douglass, Bruce Eccles, Cook
Douglass, Thomas C., Cook
Dowell, Raymond Frank, Kane
Dowiat, Stanley, Cook
Doyle, Francis E., Cook
Doyle, Frank E., Cook
Draa, Cecil C., Cook
Drabanski, Joseph S., Cook
Draznin, Solomon Z.
Drazo, E. L.
Drenckhahn, C. H., Champaign
Drennan, Clyde, Ogle
Drennan, George Leland, Morgan
Dresner, Milton H., Cook
Drischel, Frank G., Grundy
Driscoll, Robert E., Cook
Droege, E. H., Madison
Droegemueller, Edmund Henry, DuPage
Droegemueller, William H., Cook
Drucker, Arnold P., Cook
Dubiel, Charles R., Cook
Dudley, Erwin F., Macon
Duerme, Francisco, M., Cook
Duggan, Daniel J., Cook
Duguid, Robert H., Jefferson
Dulin, Theodore J., Kankakee
Dunn, Edward H., Kane
Dunn, Marion F., Lake
Dunn, Max M., Cook
Durburg, John R., Cook
Durr, S. P., Rock Island
Dvonch, William J., Cook
Dwan, Francis M., Cook
Dwyer, John Cornelius, Cook
Dworkin, Harry, Greene

Earle, Walter C., Champaign
Easton, James, Cook
Eberhart, Claude M., Cook
Edelson, Edmond K., Henderson
Edelstein, Rudolph, Cook
Edinburg, Jack J., Cook
Edwards, G. H., Perry
Edelman, Maurice I., Cook
Effron, Morton, DeKalb
Egan, Edward M., Cook

Egan, William B., Cook
Egel, Paul M., Cook
Eggers, John F., DeKalb
Ehlert, C. D., Madison
Ehrhardt, O. E., Sangamon
Ehrlich, Joseph C., Cook
Ehrlich, Leo, Cook
Ehrlich, Louis, Cook
Ehrlich, Max C., Cook
Ehrlich, Norman J., Cook
Eilert, William G., Kane
Einhorn, Harold, Cook
Eisele, Owen J., St. Clair
Eisendorf, Lester H., Fayette
Eisenstaedt, Werner F., Cook
Eisenstein, Edward, Will
Eisenstein, Harold, Cook
Eisenstein, Milton W., Cook
Eiser, Joseph, Knox
Eisin, Walter M., Cook
Elden, Harold, Cook
Elek, Stephen R., Greene
Elledge, Lloyd C., Vermillion
Elliott, Ralph A., Cook
Ellis, J. G., Vermilion
Ellsworth, Preston B., Champaign
Ellwood, Walter W., Cook
Emanuele, Nicola V., Cook
Emons, Clifford W., Madison
Endacott, John, Kankakee
Endres, Fred C., Peoria
Engle, Harold M., Cook
English, Louis C., Cook
Engelbach, Friedrich, Morgan
Ennis, Arthur L., Macon
Ennis, E. Harold, Sangamon
Entin, Oscar L., Cook
Entin, Samson D., Cook
Epstein, Casper M., Cook
Epstein, David, Cook
Epstein, Jacob M., Cook
Erenburg, Leon M., Cook
Erickson, Russell B., Coles
Erickson, William Gardner, Vermilion
Erikson, H. B., Cook
Erico, Silvo, Rock Island
Ersfeld, John G., Cook
Eschelbacher, Leo, Jefferson-Hamilton
Espenscheid, J. S., Vermilion
Espey, Hugh S., Greene
Esposito, A. R., Jackson
Esposito, Peter T., Cook
Ettleson, Abraham, Cook
Evans, Ed. G., Kane
Evans, H. A., Massac
Evans, Morton I., Cook
Eveloff, A. R., Sangamon
Fabian, Sydney, Cook
Faden, Gerson, Shelby
Fahey, Richard P., Cook
Fahlstrom, Stanley C., Cook
Fahnestock, E. A., Lawrence
Fahrner, George V., Will
Fahrner, Richard H., Will
Faigle, E. T., Cook
Faingold, Joseph E., Cook
Fairbairn, James P., Cook
Fairshter, A. E., Massac
Faletti, Anthony J., Cook
Falk, Alfred B., Cook
Falk, Nathan, Cook
Falk, Victor S., Champaign
Faller, Adolph Jr., Cook
Falstein, Eugene I., Cook
Fantus, Robert A., Cook
Fara, Frank J. Jr., Cook
Fardy, Francis P., Cook
Farinacci, Maurice G., Cook
Farmer, David K., Champaign
Farmer, Donald, Cook
Farr, Milan W., Cook
Farington, J. D., Cook
Farrior, Joseph B., Rock Island
Fash, James, Fulton
Faulkner, Harry L., Cook
Favill, John, Cook
Favus, Irving, Cook
Feher, George, Cook
Fehlmann, Frederich H., Henry
Fein, Harry S., Cook
Feinberg, Louis, Cook
Feinberg, Milton, Cook
Feinerman, Albert H., Hancock
Feinhandler, Harold S., Cook
Feinstein, Walter, Cook
Feldma, Harold, Tazewell
Feldman, Abraham W., Cook
Feldman, Edward I., Kankakee
Feldman, Emanuel, Cook
Feldman, Morris, Cook
Feldman, Paul E., Cook
Feldman, Ray, Cook
Felicelli, Nello M., Cook
Fell, Egbert H., Cook
Felsher, Zachary, Cook
Felts, W. T., Jackson
Ferguson, James H., Cook
Ferguson, Ralph L., Cook
Ferri, Nicholas A., Cook
Ferris, W. T., Whiteside
Fey, David, Peoria
Field, Homer B., Cook
Fields, Charles, Cook
Fields, Jack C., Cook
Fildes, Charles E., Richland
Finder, Jerome G., Cook
Fink, Frederick, Sangamon
Finkleman, I., Cook
Finkelstein, Jack, Cook
Finkle, Albert M., Cook
Finkle, J. R., Will
Fiore, Frank F., Cook
Fioretti, Carlo A., Cook
Fiorito, Louis, Cook
Fireman, Joseph, Cook
Firfir, Bourke, Cook
Firoved, James W., Warren
Fischer, G. G., Perry
Fisher, David, Cook
Fisher, Seymour, Sangamon
Fishkin, Ben G., Cook
Fishkin, Martin, Cook
Fishman, Jacob S., Cook
Fishman, Jerome, Cook
Fisk, Kenneth L., DuPage
Fitch, Franklin R., DuPage
Fitz, Frederick W., Cook
Fitzgerald, Maurice D., Cook
FitzGibbons, James P., Cook
Fitzmaurice, Harry A., Cook
Flack, Clarence E.
Flannery, Marvin G., Cook
Fleischli, C. A., Sangamon
Fleischli, George, Sangamon
Fleisser, Werner, Vermilion
Flentje, Edgar H., Cook
Flickenger, George, Tazewell
Floreth, N. F., Montgomery
Fogarty, Charles J., Franklin
Fogelhut, Sam, Cook
Foley, C. J., Lake
Foley, John D., Lake
Foley, Joseph, Lake
Fond, Israel, Cook
Foolke, L. E., Tazewell
Ford, James Walter, Cook
Ford, William K., Winnebago
Forrest, T. F., McHenry
Fort, Richard G., Cook
Foster, Ray Tyler, Grundy
Fouser, Ralph H., Cook
Fowler, J. V., Jr., Cook
Fox, Frederick G., Cook
Fox, F. H., Douglas
Fox, M. J., Cook
Fox, Robert G., Cook
Fox, Theodore A., Cook
Fox, William W., Logan
Fraerman, Samuel H., Cook
France, John, Shelby
Franco, Joseph R., Cook
Franco, Robert, Crawford
Frank, Irving, Greene
Frank, Louis S., Cook
Frank, William W., DuPage
Frankel, Samuel S., Cook
Frankel, Usher Leonard, Cook
Franklin, Charles E., Cook

Frazier, E. S., Effingham
Fredrikson, Lynn C., Cook
Freed, Solomon C., Cook
Freedman, Adio A., Cook
Freedman, Barnar S., Cook
Freedman, M. J., Peoria
Freedman, Robert J., Cook
Freeland, John E., Lake
Freeman, Bromley S., Cook
Freeman, Gustave, Cook
Freeman, W. R., Champaign
Freese, Homer Benjamin, Cook
Freiband, Benjamin, Cook
Freiheit, H. J., Madison
Freilich, Joseph K., Cook
Fried, Samuel L., Cook
Friedberg, Stanton A., Cook
Friedlander, Ralph, Cook
Friedman, David, Madison
Friedman, Elmer A., Cook
Friedman, Harold S., Cook
Friedman, Harry S., Ford
Friedman, Isadore E., Cook
Friedman, Jack, Cook
Friedman, Morris Saul, Cook
Friedman, Townsend Baer, Cook
Fringer, R. C., Winnebago
Frisch, Isaac J., Cook
Froelich, Bernard J., Cook
Frow, James R., Cook
Fruin, L. T., McLean
Frye, G. M., Peoria
Fuqua, Samuel Agee, Cook
Furby, Seeley B., Ford

Gaal, George, Cook
Gaberman, Peter, Cook
Gallagher, Edward J., Cook
Galloway, Charles E., Cook
Gamet, Joseph H., Rock Island
Gannon, Paul, Livingston
Garber, Jesse G., Christian
Gardner, C. L., Kane
Gardner, Leon P., Kane
Garrett, Roy P., Cook
Garrick, Samuel, Cook
Garthe, J. H., Winnebago
Garwacki, John Henry, Cook
Garthe, John J., Vermilion
Garthe, Joseph H., Winnebago
Garwacki, John H., Cook
Gast, Carl L., Cook
Gautsch, Joseph A., Macon
Gaynes, Harvey E., Cook
Gaynon, Irwin E., Cook
Gebuhr, Carl A., DeWitt
Geittmann, William F., Cook
Gelfand, Leo, Cook
Gengelbach, Robert D., Jasper
Gensch, R. A., Sangamon
Geraci, Angelo S., Cook
Gerber, Harold X., Cook
German, K. L., Kane
Gernon, William, Kankakee
Gershenson, D. A., Wayne
Gertz, George J. D., Cook
Gettelman, Eugene, Cook
Geyer, Norman Byron
Gezon, Horace M., Cook
Giacobe, Anthony J., Cook
Gianturco, Cesare, Champaign
Giardina, Jacob J., Cook
Gibson, Thomas S., Greene
Giffin, Lewis A., Madison
Giganti, James J., Cook
Gilbert, Charles S., Cook
Gilchrist, Richard K., Cook
Giles, Roscoe C., Cook
Gilfillan, Homer J., Adams
Gill, William T., Cook
Gillesby, W. J., Effingham
Gillespie, James B., Champaign
Gillig, F. W., Peoria
Gilman, George, LaSalle
Gilmore, John H., Cook
Giltner, Otis B., Bureau
Ginnan, Edward J., Cook
Ginsberg, Julius E., Cook
Ginsberg, Robert S., Cook
Gish, Rutledge E., Saline
Gettelson, Lloyd A., Cook
Glashagel, E. E., Kane
Glasser, Julius M., Cook
Gleason, M., LaSalle
Glueckauf, Lewis G., Cook
Glynn, James D.
Goff, Marcellus H., Cook
Goforth, Eugene George, Peoria
Gold Morris A., Kendall
Gold, Philip S., Henderson
Goldberg, Aaron L., Cook
Goldberg, Arthur Melvin, Cook
Goldberg, Benjamin, Cook
Goldberg, Fred A., Randolph
Goldenberg, Max
Goldenberg, Morris, Cook
Goldfinger, James M., Cook
Goldman, Allan M., Cook
Goldman, J., Cook
Goldman, Samuel, Cook
Goldner, Meyer Z., Ford
Goldstein, Byron Maurice, Cook
Goldstein, David N., Vermilion
Goldstein, Hyman H., Cook
Goldstein, Isadore I., Cook
Goldstein, Maxwell, Lake
Goldstein, Morris, Cook
Goldstein, Robert M., Cook
Goldstene, James K., Cook
Goldt, Henry B., Cook
Goldyne, Alfred J., Cook
Golinkin, George B., Jr., Cook
Gondek, Frank R., Cook
Gonwa, Walter John, Jr., Edgar
Good, Palmer, Cook
Goode, Delmar, Lake
Goodhart, Jacob A., Cook
Goodman, Clifford S., Cook
Goodman, Daniel H., Knox
Goodman, Eli, Cook
Goodman, Ephraim Frank, Cook
Goodman, Leon J., Cook
Goodpasture, W. C., Winnebago
Goran, Joseph R., Whiteside
Gorday, Abraham J., Cook
Gordon, H. S., Will-Grundy
Gordon, John R., Cook
Gordon, Louis Z., Peoria
Gordon, Orville E., Cook
Gore, Maurice, Cook
Gorecki, Ferdinand, Cook
Goren, Morris L., Cook
Gorfinkel, Leon H., Cook
Gorvett, Edmund A., Cook
Goss, Walter A., Jr., Cook
Gossard, Foster E., Cook
Gossom, Donn Roberts, Cook
Gottlieb, Jacob D., Edgar
Governale, Samuel L., Cook
Gowdy, Franklin K.,
Gowen, G. Howard, Cook
Grabar, Edward A., Cook
Grabau, Gene Henry
Gradman, Ralph, Cook
Graf, Carl N., Cook
Graff, R. J., Logan
Graham, Albert P., Cook
Graham, Charles M., Knox
Graham, J. P., Fulton
Graham, James, Sangamon
Graham, Robert J., McDonough
Graham, Vincent Paul, Cook
Grams, Leslie R., Cook
Grandone, Joseph J., Macoupin
Grant, Harry, Cook
Graupner, Gustav W., Cook
Gray, Earle O., Cook
Gray, John J., Vermilion
Gray, J. W., Kane
Gray, Thomas J., Winnebago
Green, Alan D., Cook
Green, F. C., Peoria
Green, Hyman S., Cook
Green, John W., Lake
Green, Ray C., Henderson
Green, Raymond, Cook
Greenberg, Harold A., Cook
Greenberg, Leo J., Cook
Greene, Bernard L., Kane
Greene, Earle A., Cook
Greene, J. Major, Cook
Greene, Ronald R., Cook
Greenspahn, Gerald M., Cook
Greenspon, Louis I., Cook
Greenwood, L. S., Winnebago
Greenwood, Robert C., Cook

Gregory, Gus D., Cook
Griep, Ernst A., Adams
Grier, James P., Cook
Griffith, Paul R., Cook
Grimm, Harold A., Cook
Grinker, Roy R., Cook.
Grippe, William J., Cook
Grissom, Robert L., Macon
Grodins, Fred S., Cook
Gross, Frank F., Cook
Grossman, Abraham, Cook
Grossman, Edward S., Cook
Grossman, Erwin E., Jasper
Grossman, Harry J., Cook
Grossman, Jack W., Adams
Grossman, William, Kankakee
Groth, Norton R., Cook
Grout, John L., Cook
Grove, William E., Jasper
Grubman, Marvin, Cook
Gubler, J. A., Cook
Guerin, John W., Cook
Guerra, John D., Cook
Guerrieri, John A., Cook
Gumbiner, Stanley H., Knox
Gunn, Samuel A., Cook
Gunther, A., Cook
Guokas, Peter J., Cook
Gurvey, Julius A., Cook
Gustafson, Carl J., Crawford
Gustafson, J. G., Rock Island
Gustafson, Wesley A., Cook
Guy, Chester C., Cook

Haedicke, William David, Cook
Haerem, Alf T., Cook
Haffly, Gilbert N., Cook
Haftkowski, Dominic, Cook
Hagerty, Cornelius S., Cook
Hair, Benjamin M., Cook
Halevy, Arthur A., Cook
Hall, B. I., Perry
Hall, Lewis L., Cook
Hall, James W., Jr., Cook
Hall, Marshall W., Jefferson
Hall, P. V., Bureau
Hall, Wilford F., Jefferson
Hamilton, Eugene A., Cook
Hamlin, Courtney, Winnebago
Halperin, Bernard A., Cook
Hamilton, George R., Logan
Hamilton, Samuel L., Cook
Hamm, Lee N., Logan
Hammatt, Harold W., Cook
Hammer, John M., Jackson
Hammond, K. H., Vermilion
Hammond, Rex D., Cook
Hanauer, Samuel M.
Hancur, Gerald A., Cook
Hanford, Roy E., Cook
Hangos, George W., Cook
Hanson, John O., Cook
Hanson, Martin F., Mason
Hantover, M. J., McLean
Haraburda, Stanley V., Cook
Hardre, Rene, Cook
Hardt, Harry G., Jr., Cook
Hardt, Leo L., Cook
Hardy, L. Martin, Cook
Hare, Louis A., Cook
Harmeyer, Mark E., Hardin
Harmon, T. F., Sangamon
Harned, John W., Cook
Harper, Paul V., Jr., Cook
Harrell, J. G., White
Harrington, G. L., Jr.
Harris, Garford, Cook
Harris, Irving D., Cook
Harrison, C. Jack, Cook
Harrison, Rollie M., Cook
Harrison, Stearley P., Cook
Hart, R. D. Peoria
Harter, Eli B., Champaign
Hartford, William S., Champaign
Hartlett, Elvin M., Cook
Hartley, G. T., Henry
Hartman, Charles F., Cook
Hartman, Clifford D., Lee
Hartman, Henry A., Kankakee
Hartman, Melville D., Cook
Haseltine, Charles P.
Hasewinkel, C. W., Clark
Haskins, Jack T., St. Clair
Hasterlik, Robert J.
Hastings, Donald W., Lake
Hauser, Maurice J., St. Clair
Hausman, Charles M., Cook
Haver, Harry T., Cook
Havranek, J. C., Cook
Hawkins, H. W., Peoria
Hawkins, John R., Cook
Hawkins, K. C., Cook
Hawthorne, R. O., Kankakee
Haydon, George C., Greene
Hayes, John M., Macon
Haynes, Walter G., Cook
Headland, Paul B., Cook
Heaton, J. R., Vermilion
Hebenstreit, K. J., Cook
Hecht, Rudolph, Cook
Hedge, Harry M., Cook
Hedges, Frank H. Jr., Will
Heidgen, Martin F., DuPage
Heimovitz, Jack S., Cook
Henrich, Jerome F., Cook
Heitzman, Paul O., McHenry
Helfgott, Jay L., Adams
Heller, Richard E., Cook
Hellman, Jack M., Cook
Helm, J. W., McLean
Helm, John E., Franklin
Helm, Standiford, Cook
Helming, Oscar C., Henry
Hemming, Phillip C., Kane
Hemphill, Robert B., Cook
Henner, Robert, Cook
Herdener, Russell L., Rock Island
Herrmann, Carl B., Cook
Herrmann, R. E., Henry
Herron, Earl, Cook
Hershman, Seymour, Cook
Herzog, Max, Cook
Herzon, Herbert, Cook
Heskett, Byford F., Cook
Hess, Edmond R., Cook
Heyer, Howard E., Cook
Hiatt, Kenneth N., DuPage
Hick, Ford K., Cook
Hickman, Warren R., Cass
High, Ralph L., Cook
Hilker, Albert W., Cook
Hilkevitch, Aaron A., Cook
Hill, G. R., Wayne
Hill, Harold H., Cook
Hill, Herman H., Cook
Hillenbrand, Charles, Cook
Hillman, Samuel A., Adams
Himmel, Jacob G., Cook
Hinn, George J., Lake
Hipskind, Myron M., Cook
Hirsch, Donald A., Cook
Hirschtick, Allan B., Cook
Hirz, Max
Hobbs, Thomas G., Cook
Hockberg, Paul P., Warren
Hockman, Donald E., DuPage
Hodges, Clarence, Cook
Hodges, Harry D., Cook
Hoebel, Fred G., Cook
Hoechstetter, Stanton, Livingston
Hoeffding, W. H., Edgar
Hoeppner, Walter F., Cook
Hoernschemeyer, J. L., Madison
Hoesley, John B., Cook
Hoffman, John M., Cook
Hoffman, Samuel J., Cook
Hoffman, Sidney J.
Hoffstadt, John P., Cook
Hofstra, R., Cook
Hogan, Richard, Cook
Hohf, Arnold H., Clay
Hohman, Kurt E., Cook
Holden, Alwin J., Cook
Holder, Norton W., Cook
Holladay, W. T., Lee
Hollister, Bruce A., DuPage
Holloman, L. T., Cook
Holm, Alf J., Cook
Holmes, John F., Cook
Holnitsky, Samuel C., Cook
Hong, Charles J., Rock Island
Hood, J. Rogers, Cook
Hook, Walter E., Cook
Hootnick, Jacques L., Cook
Hoover, Allen H., Cook

Hoover, R. S., Adams
Hora, James L., Cook
Horodko, Edward J., Cook
Horowitz, John Jacob, Kankakee
Horovitz, Herman J., Cook
Horwitz, Bernard, Cook
Horwitz, H. L., Cook
Horwitz, William H., Franklin
Hospers, Cornelius A., Cook
Houghton, Earl J., Peoria
Howard, Wayne C., Cook
Howe, Donnell C. Jr., Cook
Howell, Joseph D., Clark
Howser, John W., Cook
Hoyt, Lucias, Rock Island
Hrejsa, Allen C., Cook
Huber, Paul R., Cook
Hubble, William F., Macon
Hudson, G. R., Cook
Hudson, Theodore R., Cook
Huerta, S. J., McLean
Huffman, Carroll W., Cook
Hughes, Charles W., Cook
Hughes, Edgar O., Champaign
Hughes, James R., Cook
Hughes, M. J., Jackson
Hughton, Earl J., Peoria
Hulbert, Sidney Z., Lawrence
Hultgen, Francis J., Cook
Hume, Albert T., Piatt
Huml, A. P., Peoria
Hummel, Russel M., Cook
Humphrey, Kenneth C., Madison
Hunt, Robert E., Sangamon
Hunting, Ralph D., Cook
Hurley, Douglas C., Kane
Hurwich, Jerome J., Cook
Hurwitz, Ben L., Cook
Hurwitz, Charles L., Cook
Hurwitz, Paul, Cook
Hutchens, L. L., Clay
Hutchison, William A., Cook
Hutter, Charles C., Cook
Hybke, Z. S., LaSalle
Hyman, Abe A., Cook

Iknayan, H. A., Coles-Cumberland
Iler, Rex L., Kankakee
Illyes, Roscoe O., Lawrence
Imbiorski, S. J., Cook
Ingrish, George A., Cook
Ioriatti, John B., Cook
Ireland, H., Peoria
Irwin, Francis Glenn, Macom
Isaacs, Harry J., Cook
Isenhart, Lawrence F., Carroll
Isoe, Isadore M., Cook
Ivan, Michael M., Cook
Ives, Warren, Winnebago

Jabczynski, Hilbert A., Cook
Jack, Nelson B., Macon
Jackman, Abraham I., Kane
Jackson, E. L., Cook
Jackson, Sheldon A., Richland
Jacob, Joseph M., Cook
Jacobs, Frank, Fulton
Jacobs, Henry, Bureau
Jacobs, Howard M., Cook
Jacobs, Maurice, Clay
Jacobson, Herman A., Cook
Jacobson, J. R., Kane
Jacobson, Max Martin, Cook
Jacobson, Moses A., Cook
Jacobson, Oliver I., Cook
Jacobus, Marcus R., Cook
Jacobu- Ryland M., McHenry
Jaffe, Henry L., Cook
Jakopick, Wm., Cook
James, David E., Boone
Jamison, Clarence E., Cook
Jana, Edward C., Cook
Jansey, Felix, Cook
Janson, Herbert, Cook
Janus, Arthur I., Cook
Jasinski, Casimir, Cook
Jasinski, Thaddeus J., Cook
Javois, Alexander J., Bond
Jedlicka, Frank L., Cook
Jefferson, Ronald N., Cook
Jeffries, Milo Easton, Cook
Jenkins, Albert H., Cook
Jenkins, D. M., McLean
Jenkins, Hilerd W., Cook
Jenkinson, David L., Cook
Jennings, Lawrence S., Cook
Jensen, Russell, Warren
Jesser, Joseph H., Cook
Joffe, Herman, Cook
Johannes, Henry C., Cook
Johns, C. F., Morgan
Johns, C. L., Cass
Johnson, Bruce Willard, Cook
Johnson, Chester T., Cook
Johnson, Howard G., Clark
Johnson, Ira W., Richland
Johnson, J. P., Rock Island
Johnson, Lester S., Cook
Johnson, Lowell R., Vermilion
Johnson, Paul, Winnebago
Johnson, Reinhold E., Cook
Johnson, Richard P., Cook
Johnson, Robert C., Fayette
Johnston, C. W., Morgan
Johnston, J. P., Rock Island
Johnston, Kenneth P., Kane
Johnstone, J. H., Saline
Jones, Alex, Sangamon
Jones, Alfred E., Cook
Jones, Morris H., Cook
Jones, Robert M., Cook
Jones, Robert R., Rock Island
Jones, Weston W., Lake
Jones, William N., Knox
Jordan, R. F. K., Tazewell
Joss, Edward, Livingston
Josselyn, Livingston, Lake
Journat, John L., Winnebago
Judah, L. N., Champaign
Judd, Maurice H., Hardin
Julian, Ormand C., Cook
Jurek, Ladislaus J., Cook
Jurgens, Johnnes J., Cook

Kadow, Archie M., Cook
Kaell, Harry, Cook
Kahn, Alfred Jerome, Cook
Kahn, David, Cook
Kahn, Harry S., Cook
Kahn, Jack L., Cook
Kahn, Jacob V., Cook
Kahn, Otto L., Cook
Kahn, Sidney C., Cook
Kaim, S. C., Rock Island
Kaiser, Jerome, Cook
Kaiz, S. P., Lake
Kaleta, Edward, Cook
Kalisz, Walter F., Cook
Kallal, Edward W., Cook
Kallen, Irwin A., Cook
Kaminski, Paul J., Cook
Kammerling, Erwin, Cook
Kane, David S., Cook
Kane, Jerry J. Jr.
Kannapel, Lowell E., Peoria
Kanter, Aaron E., Cook
Kanter, Lester, Cook
Kanter, Myron F., Cook
Kanthak, Frank F., Cook
Kaplan, Benjamin, Cook
Kaplan, George, Winnebago
Kaplan, Joseph, Winnebago
Kaplan, Julius A., Vermilion
Kaplan, Leo A., Cook
Kaplan, Louis G., Cook
Kaplan, Morris A., Cook
Kaplan, Max, Cook
Kaplan, Sidney J., Cook
Kapustiak, Wendell, Cook
Kapustka, Edward J., Cook
Karabin, Andrew L., Cook
Karabin, John E., Cook
Karberg, Richard J., Clay
Karpass, Victor H., Cook
Karg, Frank, Fulton
Karolus, H. E., JoDaviess
Karpe, Carl H., Cook
Karas, S. J., Cook
Kasabach, Harry Y., Rock Island
Kasick, Otto, Cook
Kaske, G. J., Boone
Kasmer, Edward T., Cook
Katz, Charles, Cook
Katz, Seymour R., Cook

Kaufman, Jerome D., Cook
Kaufmon, Soul D., Cook
Kautz, Harold D., Cook
Kavka, Jerome, Cook
Kavka, Selig J., Cook
Kayne, Jerry, Cook
Keane, John W., Cook
Kearney, C. T., McLean
Kearney, James F., Cook
Kearns, Jerry J., Cook
Kearns, John Edward, Cook
Kearns, Owen A., Winnebago
Keating, Donald J., Kankakee
Keefer, John, Cook
Keigwin, Charles G., Cook
Kelikian, Hampar, Cook
Keller, John, LaSalle
Kelley, Frank J., St. Clair
Kelley, R. H., Will-Grundy
Kelley, Robert R., Champaign
Kelly, Arthur L., Cook
Kelly, C. F., Perry
Kelly, Delbert C., Cumberland
Kelly, Sylvester M., Cook
Kelly, Vincent J., Kankakee
Kelso, Thomas W., Jr., Madison
Kendall, Robert L., Menard
Kennedy, Richard L., Cook
Kenny, James Nicholas, Peoria
Kenward, Roy L., Ford
Kernwein, Graham, Cook
Kerr, Charles Roy, McLean
Kersotes, C. A., Sangamon
Kerst, J. Arthur, Sangamon
Kerwin, Raymond W., Cook
Kesert, Benjamin H., Cook
Kesert, Meyer, Cook
Ketay, J. M., Peoria
Ketterer, F. H., Clinton
Kiarsis, Victor, Brown
Kieffer, John P., Cook
Kimball, Ernest R., Cook
Kimbrell, Earl D., Cook
King, E. S., Cook
King, E. P., Cook
King, Everett S., Cook
King, Ray, Peoria
King, Walter W., Peoria
Kinne, A. Smith, DuPage
Kinne, Harry W., DuPage
Kinney, Raphael K., Lake
Kinser, W. C., Peoria
Kinzer, Richard E., Cook
Kionka, Paul F., McLean
Kipnis, Harry, Cook
Kirby, William J., Cook
Kirgis, Harold J., Cook
Kirk, Max L., Jefferson
Kirshbaum, Jack D., Cook
Kissenger, Charles, Union
Kittilsen, Lester H., Cook
Kleiman, Aaron H., Jasper
Kleinman, David, Cook
Klein, Alfred J., Cook
Kleitsch, Wm. P., Cook
Klemmer, Herbert, Vermilion
Kligerman, Sidney, Cook
Kline, Walter L., Jr., Bond
Klinghoffer, Max, Macon
Klocker, Karl James, Cook
Klubeck, Victor J., Brown
Knapp, Howard C., St. Clair
Knapp, John A., Cook
Knaus, William E., St. Clair
Knewitz, Ralph W., St. Clair
Knowles, Donald B., Cook
Kobak, Mathew W., Cook
Kobisk, O. A., Kane
Kobrin, Meyer W., Cook
Koch, J. M., Madison
Kocour, Elmer J., Cook
Koenig, Frank J., McLean
Koenigsberg, N. M., McLean
Kohlstedt, K. D., Sangamon
Kohn, Joseph J., Christian
Koivun, O. W., Rock Island
Kolb, Harold J., Woodford
Kolb, Leonard H., Cook
Koll, Irvin S., Cook
Kolodny, Sydney M., Cook
Koranda, George A., Cook
Koransky, Abraham R., Cook
Koransky, D. S., Cook
Korbin, Meyer W., Cook
Korngold, Herbert W., Cook
Koscinski, Leo J., Cook
Kostrubabla, Joseph G., Cook
Koucky, John D., Cook
Koza, John L., Cook
Kraines, Samuel H., Cook
Kraft, George L., Cook
Krafft, Henry L., Cook
Kram, David, Cook
Kramer, Charles F., Cook
Kramer, Paul, Cook
Kraszewski, Henry W., Alexander
Krause, Charles D., Cook
Krawczynski, A. C., Cook
Kreft, Alfred J., Cook
Kreml, Otto A., Cook
Kristiansen, Clarence, Cook
Krol, Edward J., Cook
Kross, Irvin W., Cook
Kruger, Samuel, Cook
Krumm, John Frederick, Cook
Krupa, J. M., Cook
Kruse, George F., Cook
Krystosek, Joseph W., Cook
Kudolla, Charles R., Cook
Kuhn, Albert A., St. Clair
Kuhns, Ralph H., Cook
Kulvin, Max M., Cook
Kunde, E. C., McHenry
Kunstadter, Ralph H., Cook
Kurtz, James F., Cook
Kvidera, George J., Cook
Kwedar, A. T., Sangamon
Kwinn, Frank C., Cook

Laadt, John Raymond, Cook
Laden, Edward L., Cook
LaFata, Francis Paul, Sangamon
Lambert, Claude N., Cook
Lampert, Elmer G., Cook
Land, Leslie Sturdevant, Cook
Landberg, Harry M., Cook
Lander, Herman B., Cook
Landes, Ralph R., Cook
Landmann, Paul E., Will
Lando, Leon, Cass
Landon, Wilbur R., Logan
Landy, Nathaniel E., Cook
Lane, John T., Cook
Lane, Paul L., Cook
Lang, Herbert, Logan
Langdon, Roy M., Cook
Lange, H. L., St. Clair
Langston, Hiram T., Cook
Larimore, Granville W., Cook
Larkin, Leo Carroll, Cook
Lash, Sidney R., Cook
Lassar, Gilbert N., Sangamon
Latimer, Earl O., Cook
Latta, Philip R., LaSalle
Lattman, Morris, Greene
Lattuada, Henry P., Vermilion
Lauer, David P., Cook
Laufman, Harold, Cook
Lavieri, Frank J., Cook
Law, Otis, Livingston
Law, Stanley G., DuPage
Lawder, H. L., Jersey
Lawler, Frank G., Cook
Lawler, Harold T., Winnebago
Lawrence, Charles H., Cook
Lawson, Robert C., Cook
Lawton, Stanley E., Cook
Layman, J. A., Rock Island
Lazar, A. M., Cook
Lazarski, Karl M., Cook
Leach, John E., LaSalle
Leader, Abel J., Cook
Leahy, Frank D., DuPage
Learner, Aaron, Whiteside
Learner, J., Whiteside
Leavdi, Solomon S., Cook
Leavitt, Samuel S., Cook
Leavitt, Sheldon, Will
Lebensohn, James E., Cook
LeBoy, Ted, Cook
Lederer, Francis L., Cook
Ledoux, Alfred C., Cook
Lee, Robert E., Cook
Leeds, Milton F., Cook

Lees, William M., Cook
Leimbacher, Earl, Will-Grundy
Lemberg, Louis, Cook
Lengyel, Carl E., Kane
Leninger, Alfred T., Vermilion
Lennarson, Vincent, Lake
Lennon, Benj. B., Cook
Lenth, V. T. J., Morgan
Lepak, Alfred J., Cook
Lerner, David G., Cook
Lerner, Harry A., Cook
Lerner, Isadore, Henry
Lerner, Louis S., Cook
Lerner, Philip, Cook
LeRoy, George V., Cook
Lery, Abraham J., Cook
Lesage, R. T., Lee
Lesemann, Frederick J. Jr., Cook
Leshin, Arno, Cook
Leuschner, Armin W., St. Clair
Lev, Maurice. Cook
Levan, Arthur B., Cook
Levenson, Joseph M., Cook
Leventhal, Michael L., Cook
Levey, Calvin I., Cook
Levey, Edward W., DeKalb
Levin, Harry, Cook
Levin, Louis, Cook
Levin, Myron J., Washington
Levin, Noah Bernard, Cook
Levine, H. J., Marion
Levine, Morris H., Williamson
Levine, Milton, Cass
Levinson, Benj., Cook
Levis, Wm. Paul, Sangamon
Levitin, Lawrence A., Cook
Levitt, Robert O., Cook
Levy, Edward W., DeKalb
Levy, Norman A., Cook
Lewe, Irving A., DeKalb
Lewin, Philip, Cook
Lewinnek, Walter, Mason
Lewis, David J., Sangamon
Lewis, Elbert K., Cook
Lewis, Henry M., Cook
Lewis, James W., Cook
Lewis, L. L., Peoria
Lewis, Ralph W., Whiteside
Lewis, Raymond O., Cook
Lewis, Robert Burns, Whiteside
Lewis, Robert M., Cook
Lewis, Samuel K., DuPage
Lewis, William C., Cook
Lewison, Edward F., Bond
Lewy, Robert B., Cook
Leyers, Rudolph P., Cook
Lichtenstein, Manuel, Cook
Lichtenstein, Meyer R., Cook
Lieberstein, Joseph H., Cook
Lieberthal, Frederick, Cook
Liederman, Albert, Whiteside
Lifchultz, Leo B., Cook
Lifschultz, Bernard, Cook
Lindberg, Howard A., Cook
Lindeen, Oliver L., Cook
Lindquist, John L., Cook
Lindsay, Arthur M., Cook
Lindstedt, N. A., Winnebago
Lindstrom, William C., Cook
Link, Gustave S., Cook
Linn, Herman J., Cook
Linnville, LeRoy L., Cook
Lipkin, Sam J., Vermilion
Lippert, Jerome H., Cook
Litter, Julius, Clay
Litterest, L. J., Peoria
Little, Harold, Cook
Livingston, A. Edward, McLean
Llewellyn, John S., Cook
Loar, Ralph R., McLean
Lock, Frank, Cook
Lockhart, Edmund S., Montgomery
Lockwood, Chester C., Cook
Lockwood, W. W., Champaign
Loeb, William J., Cumberland
Loeff, Harold M., Cook
Loeffler, Robert W., Cook
Lofdahl, George A., Will
Logsdon, Robert E., Brown
Logue, James R., Cook
Loiselle, Albert O., Cook
Long, Keith, Fulton
Lombardo, Ignace P., Cook
Longwell, Charles W., Washington
Looby, W. E., Lake
Look, William B., Hamilton
Lopresti, Philip J., Cook
Lord, Arthur E., Kendall
Loring, Milton J., Cook
Loritz, Anthony F., Cook
Lounsbury, Frank, Cook
Love, L. L., Franklin
Lowey, A. H., Peoria
Lowrey, Robert D., Cook
Lowry, Howard A., Peoria
Lowry, Robert H., Cook
Lubin, Jerome J., Cook
Lucia, Nicholas, Will
Ludmerer, Sol, Cook
Lueth, Harold C., Cook
Lund, J. A., Ford
Lundgren, Edward S., Cook
Lundy, Clayton J., Cook
Lusk, Frank B., Cook
Lusk, W. W., Macoupin
Lustgarten, Earl M., Cook
Lutz, Jacob F., Cook
Lyons, Clinton G., Crawford

MacDonald, Hugh, Cook
MacDonald, Ralph F., Cook
Machlan, Harold F., Cook
MacKiewicz, William, Cook
Mackler, Saul A., Cook
Mackoff, Herman, Cook
Mackoff, Saul, Cook
MacLane, Cleveland C., Cook
MacLeod, Sidney James, Cook
MacNamara, Homer P., Sangamon
Madden, Earl E., Cook
Madden, Leo, St. Clair
Madey, Edward V., Cook
Madison, B. B., Sangamon
Magit, Jack R., Cook
Magnelia, A. L., Winnebago
Magnus, Alexander B., Cook
Magree, Montie, Cook
Mahoney, Joseph M., Cook
Mahru, Meier, DeKalb
Maier, John L., Cook
Mailer, Andrew R., Knox
Maizkin, Lloyd L., Cook
Majarakis, James D., Cook
Makart, Carl D., Cook
Malbin, Barney, Cook
Malcolm, Donald C., Cook
Maley, Wm. Forrester, Knox
Maller, Adolph M., Cook
Malloy, Francis D., Cook
Malmberg, K. J., Sangamon
Maloney, Arnold H. Jr., Jo Davies
Malow, Louis, Cook
Malsbury, Charles W., Macoupin
Mammoser, Lambert F., Cook
Manella, J. V., Cook
Mann, A. Seldon, Madison
Manning, John J., Cook
Manning, Roy F., DuPage
Mansion, George, Tazewell
Marbell, Reuben, Cook
Marbry, George W., Cook
Marciniak, Jerome B., Cook
Marcovitch, Joseph, Ford
Marcus, Philip M., Cook
Marcus, Samuel M., Cook
Marcusson, William B., Cook
Mark, Samuel J., Cook
Markiewicz, Simon V., Cook
Marks, Frederic S., Kane
Marks, Louis M., Cook
Marks, Morton G., McDonough
Markson, David E., Cook
Marquardt, Gilbert H., Cook
Marquardt, Theodore R., Cook
Marquis, Neil J., Whiteside
Maron, James Wm., Cook
Marshall, Alfred N., Fayette
Marshall, Frederic S., Cook
Marshall, G. R., Effingham
Marshall, William P., Lawrence
Martin, A. G., Kane
Martin, F. R., Macon

Martin, George William, Winnebago
Martin, John, Cook
Martin, Joseph I., Cook
Martin, R. R., Peoria
Marvel, Wiley, DeWitt
Masciocchi, Thomas A., Calhoun
Mason, Aaron S., Lake
Mason, Frank N., Cook
Mason, M. L., Cook
Massover, Alfred J., Cook
Mastrianna, D. T., Cook
Mathews, Henry M., Cook
Matheson, Harl Wood, Bureau
Mathis, J. A., Perry
Matousek, Frank L., Cook
Matson, Kenneth L., Cook
Mathews, Henry B., Cook
Matzkin, Lloyd L., Cook
Matzner, Irving A., Cook
Mau, Walter, Cook
Mauzey, Armand J., Cook
Maxson, Theodore R., Adams
Maxwell, Carl, Randolph
May, Percy C., Marion
Mayer, Hyman R., Jefferson
Mayer, Leo L., Cook
Mayes, Corwin S., Sangamon
Mayfield, Ike J., Scott
Mazet, Robert, Sangamon
McAllister, R. G., DeKalb
McBean, James B., Cook
McCall, Harold F., Cook
McCallen, A. M., Stephenson
McCarty, Dale C., Jackson
McCarthy, Martin J., Cook
McClanahan, Charles, Cook
McClanahan, Hick H. J., Cook
McClay, Elmo Todd, Sangamon
McClure, Donald W.
McCormick, C. O. Jr., Lake
McCormick, L. J., Rock Island
McCrae, L. A., Sangamon
McCraley, William J., Will
McCready, Robert B., Cook
McCulley, R. A., Winnebago
McCullough, C. P., Lake
McCullough, Clifford, Lake
McCuskey, J. M., Peoria
McDaniels, Herbert E.
McDonald, Ralph F., Cook
McDowell, M. M., Vermilion
McElligott, Maurice J., Cook
McEwen, Ernest G., Cook
McEwen, Kenneth Wicklund, Cook
McGaughey, William M., Cook
McGinnis, Philip C. Jr., Will-Grundy
McGinnis, Wm. S., Madison
McGuigan, Robert A., Cook
McGuinness, Geo. Alfred., Du-Page
McIlnay, Olin F., Ogle
McIntosh, J. Robert, McLean
McIntosh, Walter Hunt, Cook
McKay, William G., Cook
McKinley, Hugh A., Lake
McKinley, James J., Cook
McKinley, James, Hines
McLauthlin, Carl H., Cook
McLean, Daniel R., Cook
McMahan, Herbert, Kankakee
McManus, William F., Cook
McMillan, Foster L., Cook
McMillan, John C., Cook
McMillan, C. W., Kankakee
McMorrow, Thomas R., Winnebago
McNally, Howard J., Cook
McNamara, Edward G., Cook
McNamara, Edward W., Cook
McNeely, G. B., McLean
McNemer, Philip, Alexander
McNertney, Francis D., McLean
McNutt, Justin, McLean
McQuiston, William O., Lee
McRae, Louis A., Sangamon
McShane, Patrick I., Cook
McSweeney, W. S., Will
McVety, Thomas Wilson, Macon
Mehmert, Henry E., Cook
Melendes, Stanis S., Cook
Melnick, Perry J., Cook
Meltzer, H. L., Dewitt
Melyn, John A., Cook
Melyn, Michael A., Cook
Menaker, Gerald J., Cook
Mendelson, Daniel J., Cook
Mennella, James V., Cook
Mennite, Nicholas M., Cook
Merar, Thomas J., Cook
Mercer, Ray, Adams
Mergener, John Charles, Cook
Merz, Earl H., Cook
Mesirow, Sidney D., Cook
Messman, L. E., Iroquois
Metrick, Joseph, Cook
Meyer, Alfred C., McDonough
Meyer, Geo. E., St. Clair
Meyer, Jos. C., Cook
Meyerson, Solomon B., Randolph
Michael, Isaac E., Cook
Michael, O. J., Vermilion
Michaels, Edward R., Cook
Michet, Clement J., Cook
Michmerhuizen, Robert, Cook
Mielcarek, Leonard, Cook
Milewski, Stanley Alex, Cook
Miller, Carl, Cook
Miller, Charles H. Jr., Johnson
Miller, Earl B., Cook
Miller, Edward B., Cook
Miller, Edward E., Alexander
Miller, Edwin M., Cook
Miller, Herbert P., Rock Island
Miller, H. R., Peoria
Miller, James R., Cook
Miller, Jacob M., Cook
Miller, Leo F., Cook
Miller, Louis J., Cook
Miller, Maurice, Cook
Miller, Milton L., Cook
Miller, Samuel I., Clay
Milles, George, Cook
Millet, George, Cook
Millet, R. F., McDonough
Milligan, Bruce Wade, Cook
Millis, Jack W., Cook
Mills, Morton J., Cook
Mills, Richard W., Jr.
Milroy, John J., Lake
Milroy, Robert Arthur, Kane
Mindlin, Joseph, Cook
Minner, Morris G., Cook
Mitchell, Carl R., Cook
Mitchell, George T., Clark
Mitchell, Joseph H., Cook
Mitchell, Robert H., Cook
Mitrick, Joseph M., Cook
Mittleman, Henry A., Madison
Mizock, Albert, Cook
Mizock, Sidney L., Cook
Moberley, Paul B., Cook
Moffat, J. S., Ogle
Mohardt, John H., Cook
Mohlenbrock, Wm., Jackson
Mohr, Walter C., Cook
Moisant, B. E., Kane
Molengraft, C. J., Cook
Monaco, Joseph T., Cook
Mongeau, Donald C., Cook
Monroe, Clarence W., Cook
Monroe, John W., Franklin
Monroe, Stanley Edwin, Cook
Montgomery, Bertis E., Saline
Montgomery, Nolan, Henry
Montgomery, Robert B., Champaign
Montgomery, Samuel A., Grundy
Moore, Bert, Vermilion
Moore, Franklin J., Cook
Moore, G. E., Morgan
Moore, Herbert R., Cook
Moore, Lawrence, Franklin
Moore, Rollin S., LaSalle
Moore, W. J., Winnebago
Moore, William A., Richland
Moore, William J., Cook
Morgan, Geo. Edward, McLean
Morgan, Jack A., Kane
Morginson, W. J., Sangamon
Morrey, Robert C., Cook
Morris, Harold R., Cook

Morris, Louis C., Cook
Morris, Neal, St. Clair
Morris, Richard P., Cook
Morrison, Allen R., Cook
Morrison, T. A., Cook
Morse, Lawrence S., Cook
Morton, John H., Cook
Morton, Joseph L., Edgar
Mosiman, William D., Tazewell
Mosko, Milton M., Cook
Moskovitz, Jack A., Cook
Moss, Kenneth J., Macon
Mossman, Jesse B., Cook
Motier, J. H., Cook
Movius, Alfred H., Cook
Moxon, James A., Cook
Mueller, Ferdinand Joseph, St. Clair
Mullen, Timothy, LaSalle
Mulliken, O. D., Elgin
Mulrooney, Raymond E., Montgomery
Mumler, William C., Cook
Munch, Robert F., Cook
Munson, F. W., LaSalle
Munson, Gordon B., Cook
Murdy, Carson B., Calhoun
Murfin, Maurice, Macon
Murphy, Edward L., Cook
Murphy, Edward S., Lee
Murphy, Francis C., Cook
Murphy, Frank G., Cook
Murphy, James P., Macoupin
Murphy, Michael J., Cook
Murphy, Robert C., Cook
Murphy, T. J., Macon
Murphy, Virgil L., Vermilion
Murrah, Frank C., Williamson
Murray, Charles A., Cook
Murray, Clarence A., Cook
Murray, D. E., Cook
Musick, Rowland Harold, LaSalle

Nabbe, Philip M., Cook
Nachman, Adolph R., Cook
Nachtman, Howard F., Fayette
Nadeau, Oscar E., Cook
Nadheryny, George C., Cook
Nagel, Frank E., Cook
Napolilli, Francis A., Cook
Nash, John V., Cook
Neal, Lovell A., Coles
Neber, E. N., Marion
Nedoss, Hyman P., Cook
Needels, L. J., McLean
Neseman, Arthur C., Lake
Neff, E. B., Rock Island
Neff, Lionel H., Livingston
Neff, Lowell, Livingston
Nehf, Albert, Kankakee
Neiman, Benjamin H., Cook
Neinburger, Paul S., Edwards
Nejdl, Lambert J., Cook
Nelson, Bertram G., Cook
Nelson, C. L., DeKalb
Nelson, Caryl, DeKalb
Nelson, Charles A., Tazewell
Nelson, Clayton E. J., Cook
Nelson, Kent, Ford
Nelson, Lorenzo R., Cook
Nelson, Peter A., Cook
Nelson, Tell, Cook
Nerger, Vernon Durward, Cook
Neri, Michael Peter, Cook
Nesmith, Harry D., Marion
Nesselrod, J. Perrman, Cook
Nesseman, A. C., Lake
Neuchiller, Bernard B., McHenry
Neuhoff, C. F., Peoria
Neukamp, Frank N., Kane
Neveln, Lowell C., Knox
Newell, Frank W., Cook
Newell, Robert H. Cook
Newton, William H., Cook
Nianick, Leonard M., Cook
Nicholson, Paul G., Will-Grundy
Nicoll, Homer K., Cook
Nieder, Samuel, Iroquois
Nierenberg, Paul S., Edwards
Niess, Oliver K., St. Clair
Nixon-Davis, W. J. Jr., Cook
Noble, Thomas A., Cook
Noggle, Charles L., Cook
Nolan, Lewis E., Lee
Nold, Ralph J.
Nolden, Wesley, St. Clair
Norbury, Frank Garm, Morgan
Norris, Harold V., Morgan
Norris, R. M., Morgan
North, Francis S., Lake
Noto, Samuel C., Cook
Nourie, R. L., Kankakee
Novack, Benjamin F., Kane
Novack, Louis, Cook
Nowlin, Owen, DeWitt
Nuzie, S. B., Coles-Cumberland
Nye, William A., McHenry

Oberhill, Harold R., Cook
OBrien, Donand E., Cook
OBrien, George F., Cook
OBrien, Thomas V., Cook
OCasek, Miles, DuPage
O'Connell, Morgan, Cook
OConnell, William M., Winnebago
OConnor, James D., Peoria
OConnor, John, Peoria
Oden, Joshua, Jr., Cook
Odgers, Stephen L., Cook
O'Donnell, Fred D., Cook
Ofarrell, Patrick E., Macoupin
Ogden, Lynden, Champaign
Ogle, Dan C., Mercer
Ohrenstein, Irving R., Cook
Okner, Henry B., Cook
Oleck, Henry T., Cook
Olinger, David L., DuPage
Oliver, Westley B., Boone
Olmsted, Randolph F., Cook
Olsman, Louis, Cook
Olson, Clarence, Bureau
Olson, C. P., Winnebago
Olson, Elmer J., Cook
Oltman, Diedrich L., Rock Island
Olwin, John, Cook
Olwin, John H., Crawford
O'Malley, James E., Cook
O'Neil, Hugh B., Cook
O'Neil, James T., Christian
O'Neill, James B., Cook
Orcutt, Wm. H., Cook
Orr, Kenneth D., Cook
Orrico, Joseph P., Cook
Orsburn, Ernest V., Cook
Osborne, George M., Cook
Osher, Seymour L., Cook
Osman, Emanuel M., Kankakee
Osterhagen, H. F., Coles-Cumberland
Ostrum, M. L., Rock Island
Ouandt, Eberhardt, H., Vermilion
Ovitz, John W. Jr., DeKalb

Pachman, Daniel J., Cook
Padorr, David, Cook
Padorr, Marvin P., Cook
Palermo, Amiel L., Cook
Paisley, A. M., Morgan
Palmer, W. H., Winnebago
Palumbo, Louis T., Cook
Paolozzi, Hannibal H., Cook
Papierniak, Frank B., Cook
Pardy, Frances P., Cook
Parker, F. C., Vermilion
Parker, Francis W. Jr., Cook
Parker, Geo. M., Peoria
Parker, Harry J., Cook
Parker, M. H., Clay
Parker, Robert J., McLean
Parker, Thomas Wayne, Madison
Parkin, Edward M., Cook
Parmacek, Louis, Cook
Parratt, L. W., McHenry
Parrilli, William F., Cook
Parrillo, Orest J., McDonough
Parsons, H. H., Rock Island
Parrott, Elmer L., DuPage
Partipilo, Anthony, Cook
Partridge, Milton H., Kane
Passarelli, Arthur F., Adams
Pastron, Seymour S., Cook
Patchen, P. J., Cook
Patient, William F., St. Clair

Patt, John E., Cook
Patterson, J. B., Cass
Patterson, Roy, Fulton
Patton, Robert, Sangamon
Pearlman, Maurice D., Cook
Pearson, E. F., Sangamon
Peck, Hyman, Cook
Peckler, David A., Cook
Pedersen, Axel L., Cook
Pelkey, George L., Cook
Pellettiere, Edmund V., Cook
Pellettieri, Nino, Cook
Peltzer, Wesley E., Cook
Penning, Howard L., Sangamon
Percy, Irving E., Cook
Perkins, George L., Cook
Perkins, R. D., Rock Island
Perkins, William Charles, DuPage
Perlman, Lawrence, Cook
Perlmutter, Harold M., Cook
Pernokis, Evans W., Cook
Pernworth, Paul H., Madison
Perritt, Richard A., Cook
Perry, Edward J., Cook
Peters, Walter J., Cook
Peterson, A. Clarence, Cook
Peterson, Arthur Karl, Cook
Peterson, George H., Kane
Peterson, Morris, Cook
Peterson, Paul G., Cook
Peterson, Philip L., Cook
Petri, K. N., Peoria
Pettry, Harvey, Shelby
Peven, Philip S., Cook
Phelps, Gardner D., Cook
Phillips, John Aubrey, McHenry
Phillips, Roy, Cook
Phillips, Spencer K., Cook
Phillips, Walter J., Cook
Phillips, William P., Cook
Pick, James W., Cook
Pickett, William J., Cook
Pilchman, Sam, Bureau
Pinne, George F., Cook
Piper, William N., Edgar
Piszkiewicz, Frank Joseph, Cook
Pister, Max, Cook
Pittman, Cole D., Peoria
Pitzaferro, John J., Cook
Plain, George, Kane
Platt, Alfred J., Cook
Platt, Matthew, Cook
Plaut, Adrian A., Cook
Plaut, Clarence T., Cook
Plaut, Julian L., Cook
Plestina, Joseph M., Cook
Pohl, Carl Matthias, Jr., Cook
Polan, Robert J., Cook
Pollack, Samuel, Cook
Pollack, Seymour L., Cook
Pollard, Edward V., DeWitt
Pollack, Fred, Cook
Pomaranc, Mark M., Cook
Pope, Charles Evans, Cook
Poremski, Thaddeus, A., Cook
Porte, David M., Cook
Porter, G. L., Champaign
Poska, T. A., Rock Island
Post, John, Cook
Potekin, Jesse S., Cook
Potter, Charles Chandler, Madison
Potter, J. J., Winnebago
Potter, Robert M., Cook
Potts, W. J., Cook
Powell, Harry I., Cook
Powell, J. R., Champaign
Prempas, Thomas G., Cook
Pressman, David, Cook
Preston, Frederick W., Cook
Pribble, John H., Cook
Price, Harold, Cook
Price, Joe H., Hamilton
Price, R. G., McLean
Pritikin, Roland I., Cook
Probasco, J. J., Winnebago
Prunty, F. C., Champaign
Przygocki, S. F., Cook
Puckey, Maurice V. H., Cook
Puestow, Charles B., Lake
Puntenney, Irving, Cook
Purvey, John C., McHenry
Pyzik, Stanley W., Cook

Quandt, Eberhardt, H., Winnebago
Quen, Frank B., Cook
Quenzer, Fred A., Cook
Quin, Jeremiah, Cook
Quinn, E. R., Madison
Quinn, Frank M., Cook
Quinn, H. Edmond, Cook

Raber, Paul A., Cook
Raclin, Ralph Arthur, Cook
Radzyminski, S. F., Cook
Rafool, Francis, Peoria
Ragins, Alex R., Cook
Raichart, William A. J., Cook
Raider, Jack H., Cook
Raider, Joseph, Lake
Raiford, Theodore Sidney, Macon
Rainey, C. W., Cook
Ralston, Donald E., Ford
Rambar, Alwin C., Cook
Ramenofsky, A. I., LaSalle
Ramey, Cash C. Jr., Brown
Rampona, Louis E., Cook
Rand, George L., Cook
Randell, Harold E., Cook
Randolph, Henry E., Cook
Ranke, Eugene J., Cook
Rankin, Tyler, Winnebago
Rannells, Charles H. J., Cook
Ranney, Alden B., Cook
Ransom, G. T., Wayne
Ranson, Stephen W., Jr., Cook
Rapp, William E., Cook
Rappaport, Joseph N., Cook
Rasche, Herbert P., Cook
Rattanne, Edward, Cook
Rattner, Bernard, Cook
Rayer, K. N., Kankakee
Raymond, Frank K., Cook
Raymond, Sidney W., Cook
Rayson, E. H., LaSalle
Reagan, Sheldon W., Kankakee
Reagan, Thomas H., Cook
Reaney, Burnell V., Cook
Reasoner, M. A., Madison
Rebillot, J. R., Montgomery
Redmond, Ralph N., Whiteside
Reed, Francis A., Cook
Red, Joseph, Cook
Reeder, Clifton L., Saline
Reichert, Donald J., Kane
Reid, Stephen E., Cook
Reierson, Peter A., Cook
Reifler, Reuben M., Christian
Reilly, Maurice J., Cook
Reimers, Leslie R., Cook
Reingold, Herbert J., Cook
Reinhardt, Charles O., St. Clair
Reinhardt, O. F., St. Clair
Reisch, J. E., Sangamon
Reiter, Joseph, Cook
Reitman, Paul H., Cook
Rence, William G., Cook
Requarth, William H., Cook
Resnick, Carl H., Cook
Rest, David, Cook
Restarski, Alvin F., Cook
Restivo, Jack L., Cook
Reuther, Theo F., Cook
Reymont, Anthony E., Cook
Reynolds, Robert L., Cook
Reynolds, William F., St. Clair
Rhea, Keith, DeWitt
Rian, Oliver, Peoria
Riba, Leander W., Cook
Ricci, Henry N.
Richards, Francis L., Sangamon
Richardson, Gene T., Cook
Richman, S. H., Rock Island
Richmond, Julius B., Cook
Richter, Harry M. Jr., Cook
Ricketts, F. J., Champaign
Ricketts, J. A., McHenry
Rider, Larry D., McDonough
Rightman, Bert, Cook
Rink, Arthur G., Cook
Rinker, William L., Sangamon
Ripley, Louis Paul, Cook

Ritter, Jerome, Vermilion
Ritter, Israel Irving, Cook
River, Louis P. Jr., Cook
Roane, R. D., Clinton
Roark, Samuel P., McDonough
Robbins, Fred P., Cook
Robbins, Joseph M., Cook
Robbin, Nathan L., Cook
Robbins, R. H., Lake
Roberg, Norman B., Cook
Roberg, O. Theo. Jr., Cook
Roberson, William V., Madison
Roberts, E. L., Iroquois
Roberts, George M., Cook
Roberts, Jack, Will
Roberts, J. M., Iroquois
Roberts, Ralph C., Cook
Robertson, Howard Miles, Cook
Robin, Milton, Cook
Robinson, Harry M., Cook
Robinson, Leon E., Mercer
Robinson, Paul I., Jefferson
Robinson, Robert W., Jefferson
Rocco, Paul C., Cook
Rockey, L. F., Stephenson
Rockey, V. V., Stephenson
Rodewald, H. H., Jackson
Rodholm, Ansgar K., Cook
Rodriquez, Arthur A., Cook
Roeder, S. D., Iroquois
Rogers, J. C. Thomas, Champaign
Rokita, Adam W., Pike
Romano, John E., Cook
Romanski, Arthur F., Cook
Rome, Sol, Cook
Rooney, James A., Warren
Root, Donald H., Adams
Rooth, Sydney S., Cook
Rosack, Henry P., Cook
Rosanova, Albert R., Cook
Rose, Fred E. Jr., St. Clair
Rose, Gabriel, Kankakee
Roseborough, A. S., Winnebago
Roseman, Ephraim, Cook
Roseman, L. L., Mason
Rosen, Benjamin B., Cook
Rosen, David, Clark
Rosen, Isaac, Cook
Rosenbaum, Edward E., McDonough
Rosenberg, David Harry, Cook
Rosenberg, J., Kane
Rosenberg, Nathan, Cook
Rosenberger, Andrew, Jasper
Rosenbloom, Harold H., Cook
Rosenblum, Albert F., Cook
Rosenblum, Alfred H., Cook
Rosenblum, Bernard F., Cook
Rosenblum, Earl, Cook
Rosenfeld, Robert T., Cook
Rosengard, J. L., Cook
Rosengrant, George B., Cook
Rosensteil, Henry, Stephenson
Rosenthal, Carl, Cook
Rosenthal, Irving H., Cook
Rosenthal, Martin J., LaSalle
Rosenthal, Moris M., Cook
Rosete, Francisco, A., Cook
Rosi, Reno, Cook
Ross, Charles A., Knox
Ross, Donald, Cook
Ross, Perry W., Cook
Ross, Philip H., Cook
Rossiter, Donald E., Lake
Rossman, E. J., Kane
Roth, Harold A., Cook
Roth, John Bernard, Grundy
Roth, Julius Andrew, Macoupin
Roth, Leslie W., St. Clair
Rothenberg, M., Marion
Rothman, Albert, Hancock
Rottapel, David J., Cook
Royce, Emery E., Marshall
Royce, Grant E., McHenry
Rubens, Eli, Cook
Rubenstein, Hyman I., Cook
Rubenstein, Joseph, Cook
Rubin, Gerald S.
Rubin, Herbert E., Cook
Rubin, Simon S., Cook
Rubenstein, H. I., Cook
Rubin, Harold, Cook
Rubin, Herbert E., Cook
Rudens, Maurice C., Cook
Rudnick, Dorrin F., Cook
Rubovitz, Frank E. Jr., Cook
Russell, Arch S., Champaign
Russell, Lyle W., Bureau
Rutherford, R. H., Macoupin
Rutledge, J. H., Pike
Ryan, Albert R., Greene
Ryan, H. E., Marion
Ryan, H. O., Adams
Rygh, Edgar A., Lake
Rylander, Carl M., Knox
Rypins, E. L., McLean

Sabath, Donald J., Cook
Saberman, Meyer I., Cook
Sachnoff, Maurice, D., Cook
Sachs, Mandel J., Cook
Sacks, Harold J., Cook
Saide, Robert A., Kankakee
Sala, R. O., Rock Island
Salberg Arthur K., Cook
Saletta, Chas. A., Cook
Saletta, Frank J., Cook
Saltman, Simon Y., Cook
Salvatore, Anthony G., Franklin
Salzman, J. M., Sangamon
Sammis, Anthony C., Macoupin
Sams, Crawford F., St. Clair
Sanberg, Heinz Kurt, Shelby
Sandberg I. M., La Salle
Sanders, Zal H., Rock Island
Sandler, William S., Cook
Sandy, William A., Lake
Sansone, Vincent C., Sangamon
Santaniello, William, Edwards
Santoro, Antonio, Cook
Saphir, William, Cook
Sargent, William F., Marion
Sarkissian, S. D., Cook
Sarma, Pashupati J., Cook
Sasko, Vladimir M., Cook
Sass, Louis A., Cook
Satz, Leo, Cook
Sauer, F. E., Winnebago
Saul, Leon Joseph, Cook
Saunders, H. Prather, Cook
Savage, John L., Cook
Savitt, Leonard E., Cook
Sawyer, James G., Cook
Sawyer, Preston, Vermilion
Sax, Daniel D., Cook
Saxon, Leonard, Cook
Saxon, M. R., Kane
Sazama, Francis J., Cook
Scanlon, William, LaSalle
Schaefer, Joseph E., Cook
Schafer, Robert, Cook
Schaffer, Bernard J., Cook
Schaller, E. H., Monroe
Schaller, O. B., Iroquois
Scheinberg, Schayel, Cook
Scheman, Louis, Cook
Schertz, Truman B., Woodford
Schettler, R. E., Randolph
Schiff, A. L., Cook
Schiff, Isadore J., Cook
Schiff, Joseph H., Cook
Schilsky, J. L., Sangamon
Schimmel, Walter A., Cook
Schindler, John A., Cook
Schlesinger, Lee H., Cook
Schmitt, Paul G. F., Cook
Schneider, Gerald E., Cook
Schneider, Harold, Bond
Schneider, Max, Cook
Schneider, Sam, Randolph
Schnell, Richard J., Winnebago
Schnepp, Kenneth H., Sangamon
Schnicke, E. H., Bureau
Schoenwetter, Arthur H., Cook
Schoolman, Joseph G., Cook
Schotz, Seymour, Cook
Schowengerdt, W. H., Champaign
Schreiber, Manuel, Cook
Schrek, Robert, Cook
Schrey, Edward L., Cook
Schreiber, Adrian, Boone
Schroth, George J., Cook
Schubert, Michael, Marshall
Schultz, Alfred, Morgan
Schultz, Abraham, Cook
Schultz, Gordon H., McLean

Schuman, Irving, Cook
Schurmeier, Frederick A., Kane
Schwart, Edward J., Cook
Schwartz, Isadore, Livingston
Schwartz, Louis, Kankakee
Schwartz, Louis B., Cook
Schwartz, Martin L., Jackson
Schwartz, Walter W., Cook
Schweitzer, Edmund H., Winnegago
Schwerin, George S., Cook
Scopelite, J. A., Madison
Scott, A. C., Randolph
Scott, Dale F., Whiteside
Scott, Jack P., Cook
Scott, Stephen C., Cook
Scott, Thomas C., McLean
Scott, Thomas G., Livingston
Scott, Wilbert E. Jr., McLean
Scudieri, Carmen, Grundy
Seaforth, Edward W., Cook
Seaman, William B., Cook
Sears, K. M,. Kane
See, William B., Cook
Seed, Lindon, Cook
Seeley, Harmon, DeWitt
Segenreich, Harry M., Kankakee
Seidman, Leon H., Cook
Seidmon, Edward E. P., Cook
Seifert, E. H., Knox
Seifert, W. F., Winnebago
Seinfeld, Samuel Gero, Cook
Sellett, Leonard V., LaSalle
Seltzer, Alvin, Montgomery
Senenthal, Michael L., Cook
Seron, Vaheh, Will
Serota, Herman, Cook
Serritella, Rocca V., Cook
Sexton, George, Champaign
Seymour, Fred W., Cook
Seymour, Guy E., McLean
Shabat, L. Willard, Cook
Shagam, Robert M., Cook
Shalla, Leon S., Cook
Shallenberger, P. L., Cook
Shamel, J. H., Iroquois
Shapiro, Arthur J., Cook
Shapiro, Fred, Cook
Shapiro, Louis, Kankakee
Shapiro, Maynard I., Cook
Shapiro, Isadore M., Cook
Shapiro, Morris J., Franklin
Shapiro, Samuel, Cook
Sharer, G. L., Kane
Sharer, Robert F., Cook
Sharp, J. R., Macoupin
Sharpe, George, Cook
Shaw, Jesse W., Cook
Shaw, Maurice M., Cook
Shaw, William B., Cook
Sheade, Albert, Cook
Sheagren, John W., Vermilion
Sheehe, N. L., Winnebago
Sheets, Raymond F., Hancock
Shellow, Harold, Cook
Shepherd, Earl D., Cook
Sheridan, Edward Paul, Lawrence
Sherman, Thomas W., Cook
Sherrod, Vincent Alan, Crawford
Shevin, Selig A., Cook
Shinall, Harold, St. Clair
Shinglemen, Willard E., Cook
Shoger, Gilbert, Cook
Shriner, Walter, Kane
Shronts, John F., McHenry
Shulruff, Harry I., Cook
Shultz, Gordon H., McLean
Shuman, Harry W., Rock Island
Shure, Norman, Cook
Sibilsky, Carl, Peoria
Sideman, Sidney, Cook
Siegal, Henry A., Cook
Siegal, Irving, Cook
Siegel, Morris, Cook
Siegel, Theodore, Jefferson
Sieger, Simon, Vermilion
Siegert, R. B., Christian
Silver, Saul L., Cook
Silverstein, Joseph, Cook
Simmons, Warren K., Cook
Simon, S. W., Cook
Simons, Joseph, Cook
Simons, Morton, Cook
Simonson, Melvin, Cook
Simpson, R. M., Macoupin
Sims, Murray W., Cook
Simunich, William A., Cook
Sinaiko, Russell P., Cook
Singer, John D., Cook
Singer, Paul L., Cook
Sinnott, Richard F., Cook
Sintzel, Aldis R., St. Clair
Sippy, Hall I., Cook
Skeele, William A., Madison
Skinner, Merton B., Will
Sklar, Isidore A., Cook
Skolnik, Emanuel M., Cook
Sladek, William R., Cook
Slater, R. A., Peoria
Slatin, Louis, Bureau
Slaw, Adam, Tazewell
Sloan, Howard P., McLean
Sloan, Jack Herzl, Cook
Slobodin, Harry, Cook
Slott, Irving, Cook
Slotta, Alfred M., Cook
Slusser, Gerald A., Douglas
Smejkal, Walter F., Cook
Smialek, John M., Cook
Smiley, William A., Cook
Smith, C. Otis, Cook
Smith, Carleton R., Douglas
Smith, Durand, Cook
Smith, Edward C., Cook
Smith, George W. Jr., Cook
Smith, Harvey S., St. Clair
Smith, Herschel S., LaSalle
Smith, Homer E., Cook
Smith, James J., Cook
Smith, Kenneth John, Cook
Smith, Louis D., Cook
Smith, Paul, Crawford
Smith, Robert H., Cook
Smith, Sidney, LaSalle
Smith, Stuart G., Union
Smith, William B., LaSalle
Smith, Winston Wm., Lake
Smollar, Leo, Cook
Snavely, John R., Whiteside
Snead, Claude R., Cook
Snively, W. D., Rock Island
Snydacker, Daniel, Cook
Snyder, Rufus A., Cook
Sodaro, Eugene J., Cook
Sofield, Harold A., Cook
Sokol, John K., Cook
Sokolowski, F. W., Madison
Solander, Carl K., Cook
Soldmann, William T. Jr., Cook
Solomon, Ernest M., Cook
Solomon, Jerome, Cook
Solomon, Samuel Jr., Cook
Somers, Harry V., Cook
Sommers, Sheldon, Lake
Sondag, R. F., St. Clair
Sosson, Edward, Cook
Soukup, Victor, Logan
Sours, James W., Peoria
Sowden, Paul R., Cook
Spackman, Ross H., Cook
Spaeth, Ralph, Cook
Spector, Frederick, Cook
Spector, Israel H., Cook
Speer, Ralph E., Cook
Spellberg, Mitchell A., Cook
Spencer, R. A., Cass
Spicer, Donald D., Edgar
Spierer, Eugene, Cook
Spinka, Isadore, Kankakee
Spira, Samuel B., Cook
Spiro, Harry M., Clay
Spivek, Mandel L., Cook
Spomer, John P., Cook
Sprafka, Raphael R., Cook
Stack, James K., Cook
Stackhouse, S. P., Lee
Stahmann, F. S., Peoria
Stamler, Maurice, Macon
Stanbery, George A., Fayette
Standish, Myles, Cook
Stanton, Herbert M., DuPage
Stanuel, Peter J., Lake
Starck, Carl Danielsen, Cook
Starkee, Carlton C., Massac
Starkey, T. A., Cass

Starnes, William L., LaSalle
Staron, John M., Cook
Starr, Adolphus R., Cook
Starr, Merritt P., Cook
Starsiak, Casimir R., Cook
Stassi, Antony V., Will
Stazio, Gerald M., Cook
Stearns, Alexander L., Cook
Steck, Irving E., Cook
Steele, Wendell M., Kane
Steer, A. E., Sangamon
Stegmaier, George, Cook
Stein, Albert F., Cook
Stein, Alfred, Cook
Stein, Benjamin F., Cook
Stein, Emil J., Cook
Stein, Justin J., Cook
Stein, Philip J., Cook
Steinberg, D. Louis, Cook
Steinberg, David W., Cook
Steinberg, Hyman S., Cook
Steinberg, Meyer, Cook
Steinberg, Meyer J., Cook
Steinbock, Henry F., DuPage
Steinbrecher, B. C., Cook
Steiner, Edward J., Cook
Steiner, Louis M., Cook
Steiner, William E., Marion
Steinert, Theodore, Cook
Steinhoff, Carl F., Cook
Steinman, William, Cook
Stellner, Howard A., Knox
Stengel, H. J., Ogle
Stenn, Arthur, Cook
Stephen, Robert J., Will
Stephens, Ed, Marion
Stephens, Harry H., Cook
Stephenson, G. W., McLean
Stephenson, Hack U. Jr., Cook
Sternberg, Thomas H., Peoria
Stettauer, Joseph L., Cook
Stevens, J. W., Perry
Stevens, Philip Henry, Cook
Stevenson, Walter, Adams
Stewart, B. Lyman, Sangamon
Stewart, F. J., Henry
Stillerman, Manuel L., Cook
Stilwell, L. M. T., Champaign
Stimson, Horace P., Cook
Stinchfield, Frank E., Greene
Stine, Leonard A., Cook
Stokes, Robert F., Cook
Stoll, C. G., Lawrence
Stoll, John E., Cook
Stone, Fred D., Cook
Stone, Herman, Richland
Stone, Herman H., Cook
Stoops, Richard B., Cook
Stotz, Kenneth F., Cook
St. Pierre, Roderick G., Fayette
Straus, Francis H., Cook
Strohl, Everett L., Cook
Strong, Edwin R., DuPage
Strouse, Carl D., DeKalb
Stuart, Carroll W., Cook
Stubblefield, H. I., McDonough
Stuppy, George W., Cook
Stuteville, Orion, Cook
Sugar, Hyman, Saul
Sugden, Charles, Lake
Suino, John B., LaSalle
Sukey, John, Cook
Sukis, Anthon Edward, Cook
Sukov, Marvin, Cook
Sullivan, Ralph D., Cook
Sullivan, Samuel J., Cook
Sullivan, Tim, Whiteside
Sullivan, William B., Cook
Summers, Thomas F., Richland
Sumner, Albert, Cook
Sutch, V. J., Champaign
Suttie, Grant, DeKalb
Suttle, Robert C., Knox
Sutton, Charles F., Peoria
Sutton, Robert M., Peoria
Svetich, Edward, Will
Swantz, Henry E., Cook
Swartz, Howard, McLean
Swartz, Isadore, Livingston
Sweeley, William J., Cook
Sweeney, Anthony J. Jr., Cook
Sweeney, Leo P., Cook
Sweitzer, Caesar, Cook
Swift, Frederick J. Jr., Cook
Swigert, Verne, Cook
Swiontkowski, Stanley, Cook
Sykora, Lawrence J., Cook
Szczurek, Edward W., Cook
Szewczyk, Thaddeus S., St. Clair
Szukiewicz, John A., Cook
Szymczak, Francis S., Cook

Talbot, Charles G., Cook
Talbott, Ralph E., Cook
Tambone, John R., Cook
Tanz, Stanley S., Madison
Tarre, Harold I., Cook
Taub, Norman, Cook
Tauber, Sidney W., Cook
Tavenner, J. L., Lee
Taylor, Eugene E., Cook
Taylor, James H., Douglas
Taylor, James S., Cass
Taylor, Lawrence K., Franklin
Taymor, Joseph, Cook
Teasley, B. C. Jr., Crawford
Teborek, Roy F., Cook
Teitelman, S. Lloyd, Cook
Telford, E. W., DeKalb
Telser, Stanley E., Cook
Temple, Claude Oliver, Cook
Tepper, Sidney M., Cook
Terrell, E. E., Edgar
Terone, Henry M., Cook
Tesar, Frank Joseph, Cook
Teter, Lloyd F., Tazewell
Tetrev, Jaroslav, Cook
Textor, Charles S., Cook
Thatcher, Harold W., Cook
Theis, Frank V., Cook
Thelan, L. L., Kane
Thomas, Arthur H., Cook
Thomas, Clyde O., Stephenson
Thomas, Edward M., Greene
Thomas, E. W., Cass
Thomas, Joseph W., Effingham
Thomas, Morris E., Cook
Thometz, Robert W., Cook
Thompson, Arnold M., Cumberland
Thompson, E. L., Peoria
Thompson, Harry, Jefferson
Thompson, Orris M., McLean
Thornburg, W. M., Perry
Thrift, Chester B., Cook
Thurerer, George R., McHenry
Thurston, E. W., Cook
Tidwell, John W., Williamson
Timm, Oreon K., Vermilion
Timmons, P. J., Henry
Tindall, F. G., Winnebago
Tinsley, Milton, Cook
Tobiasz, Alfred E., Cook
Tobin, James W., Kane
Tobin, Walter W., Cook
Todd, Malcolm C., Alexander
Toomey, Noxon, Sangamon
Toomey, Thomas N., Sangamon
Topcik, A. A., Lake
Towle, Gilbert A., Cook
Towner, F. R., Kane
Tracy, Paul C., Cook
Trapp, Anthony N., Cook
Trapp, Robert N., Logan
Tremaine, Myron J., Logan
Trepagnier, Francis B., Ford
Tresley, Ira J., Cook
Triolo, Anthony, Cook
Trotter, J. D., Hancock
Trumpe, D. H., Sangamon
Tsoulos, George D., Cook
Tulsky, Alex S., Cook
Turek, Mandel H., Cook
Turley, Vigo Thomas, Macon
Turnbull, George C., Cook
Turner, George C., Cook
Turner, John W., Cook
Turner, Marion A., Franklin
Turner, Samuel J., Cook
Turow, Irving L., Peoria
Tussing, Rudolph F., Cook
Tyllas, Harry A., Cook
Tysell, John E., Cook

Udesky, Herbert L., Cook
Uncapher, Rex P., Cook
Urbas, John E. Jr., Vermilion
Urist, Maurice, Kankakee
Urkov, Joseph ,Cook
Uthoff, Carl J., Cook
Utter, Henry, Saline
Utz, Walter J., LaSalle

Vacante, Anthony B., Cook
VanAtta, Roger A., Cook
Vandermyde, I., Whiteside
Van Dorf, Nathaniel, Cook
Van Hook, Henry M., Logan
Van Kirk, Frank W. Jr., Cook
VanderLaan, John E., Cook
Vandermyde, Isaac, Whiteside
VanLandingham, H. W., Winnebago
Van Orden, Max T., Cumberland
Van Pernis, Paul A., Jefferson
Van Wein, Stefan, Cook
Varney, Harley R., Henry
Vass, Alajos, Sangamon
Vazquez, Hector O., Cook
Vermeren, John C., Cook
Vermeulen, Cornelius, Cook
Verneuil, J. L., Madison
Veseen, Leslie L., Cook
Vesely, Harry Charles, Peoria
Vicher, Edward E.
Vickery, Eugene L., Stephenson
Viers, John Wesley, Knox
Voller, Richard L., Cook
Voltz, V. C., Winnebago
VonZelinski, Walter, Cook
Voris, Harold C., Cook
Vorisek, Eler A., Cook
Vryonis, George, Champaign
Vynalek, William J., Cook

Wachs, Leonard V., Cook
Wade, Chester, Cook
Wadsworth, Harold V., Will
Wagenseller, Samuel Miller, Macon
Wagner, Arnold, Cook
Wagner, David H., Cook
Wagner, Jack, Cook
Wagner, M. W., Cook
Waisman, Morris, Cook
Wakefield, William J., Macon
Walbright, George W., Douglas
Wald, Sidney Irving, Perry
Walker, F. Earl, Cook
Walker, Wayne R., Tazewell
Walker, Wm. D., Washington
Wall, Emmett D., Peoria
Wall, John W., Cook
Wall, Sidney I., Perry
Wallace, James H., Cook
Wallace, John K., Marion
Waller, James B., Macon
Wallheiser, Laverne M., Cook
Wallner, Linden J., Lake
Walpole, Stewart H., Cook
Walsh, Edmund N., Cook
Walsh, J. A., Peoria
Walsh, John J., Cook
Walsh, Thomas G., Cook
Walter, Jacob, Cook
Walters, William H., Cook
Waltman, Charles A., Cook
Walton, Joseph E., Champaign
Walzer, Israel, Cook
Waner, Wm. L., Cook
Wangelin, E. H., St. Clair
Ward, Carl, Livingston
Ward, Edward J., Peoria
Ward, James A., Massac
Warmolts, Lambertus, Ogle
Warner, H. R., Winnebago
Warren, Harry A., Champaign
Warren, Irving A., Cook
Warsaw, Eugene, Cook
Warshell, Arnold H., Cook
Was, Harold H., Cook
Washington, John C., Cook
Waskow, W. L., Winnebago
Waskowicz, Aloysius T., Cook
Wasserman, Reuben R., Cook
Waters, L. C., Henry
Waters, William I., McLean
Wathier, L. N., Henry
Watson, Ernest S., DuPage
Watters, C. L., Henry
Wattleworth, K. L., Jasper
Waude, Sidney P., Cook
Wayland, Thomas Z., Williamson
Weatherly, J. A., Jackson
Weaver, Thomas A. Jr., Greene
Webb, Edward F., Winnebago
Webber, Max W., Woodford
Weber, Bernard A., Richland
Weber, Eugene P., Richland
Weber, Lawrence F., Richland
Weber, Thomas L., Richland
Webster, James Randolph, Cook
Wedig, John H., Madison
Wedral, Jerry W., Cook
Weed, Vernon A., Coles
Wegner, E. A., Cook
Weidner, Morris R., Cook
Weil, Nathan Jr., Cook
Weinberg, Benjamin A., Adams
Weinberg, Bernhard J., Cook
Weinberg, Charles M., Cook
Weinberg, Harry B., St. Clair
Weinberg, Julius J., Perry
Weiner, Harry I., Cook
Weiner, Sam F., Cook
Weinfeld, Gus, Lake
Weinstein, Leonard, Cook
Weinstein, Roy C., Cook
Weinstein, Seymour, Cook
Weinstein, William, Greene
Weintraub, I. Irving, St. Clair
Weir, Edgar W., Piatt
Weisbach, Philip T. Jr., Cook
Weisberg, William W., Cook
Weisdorf, William, Cook
Weiss, Eugene, Ogle
Weiss, J. Allan, Cook
Weiss, John M., Rock Island
Weiss, Leon H., Cook
Weissbuch, Mitchel R., Cook
Weisskopf, Leonard H., Cook
Weissman, Charles G., Madison
Weissman, Irving, Alexander
Weissman, Leonard H., Cook
Weissman, Louis, Cook
Welch, James K., Fulton
Wellstein, A. W., Henry
Welsh, Raphael J., Cook
Wendorf, Albert, Cook
Wendt, Alfred C. Jr., Cook
Wente, C. F., Kane
Werbel, Ernest W., Cook
Werner, Wm., Tazewell
Werth, Joseph, Monroe
West, John Baldwin, Cook
West, John F., Boone
Westenberger, L. H., Cook
Westmark, Carl, Cook
Weston, Charles L., McDonough
Wexler, Samuel, Logan
Wharton, James D., Cook
White, Harvey, Cook
White, M. E., Kankakee
White, Noland W., Marion
White, Minor E., Kankakee
Whitfield, Harvey J., Cook
Whitmer, R. Glenn, Cook
Wien, Norman A., Cook
Wiener, Morton J., Hamilton
Wigodsky, Herman S., Cook
Wilburne, Morris, Cook
Wiles, Isaiah A., Cook
Wilkinson, Arthur W., Cook
Williams, Edward V., Ford
Williams, Ernest B., Cook
Williams, Francis R., Cook
Williams, Howard, Cook
Williams, Jack, Clark
Williams, Philip C., Cook
Williams, Reden R. Jr., Fulton
Williams, Robert E., Cook
Williams, Silas W., Saline
Williamson, Ben K., Adams
Williamson, H., Vermilion
Willis, David A., Cook
Wilson, Arthur D., Greene
Wilson, Clyde S., St. Clair
Wilson, Earle Edward, Cook

Wilson, Ellsworth, Madison
Wilson, Hugh, Lake
Wilson, S. J., Champaign
Wiltrakis, George A., Madison
Wiltrakis, George G., Cook
Windham, Samuel W., Greene
Winer, Allen E., Cook
Winograd, Alvin M., Cook
Wittenberg, C. E., McLean
Wloczewski, Joseph A., Cook
Woerner, Charles A., Cook
Wojcik, S. J., Lee
Wojtowicz, Henry W., Cook
Wolf, Alexander, Cook
Wolf, Luther, Lake
Wolf, William S., Cook
Wolfarth, Alfred, Cook
Wolfe, Albyn, Morgan
Wolfe, Alfred S., Winnebago
Wolff, L. H., Lake
Wolin, Irving, Cook
Wollak, Charles, Will
Wolters, Simon L., Cook
Wones, Edward Martin Jr., Cook
Wood, George C., Clark
Wood, O. M., Fulton
Woodard, Lawrence E., Cook
Woodford, Hackley E., Christian
Woodworth, Philip R., DuPage
Woody, Howard G., Cook
Woolhandler, George, Cook
Woolhandler, Harry V., Effingham
Worden, Robert W., Cook
Wormley, G. W., Winnebago
Wright, Theodore S., Cook
Wrist, Maurice, Kankakee
Wrork, D. H., Winnebago
Wunsch, C. L., Kane
Wyness, John A., Sangamon

Xavier, Frank K., Cook

Yaeger, Harry A., Montgomery
Yaffe, Bernard, Cook
Yanowitz, Meyer, Cook
Yazarian, A. Y., Vermilion
Yeargin, C. E., Cook
Yellen, Harry J., Cook
Yesinick, Louis, Cook
Yolton, Leroy W., McLean
Yonker, William, Cook
Young, Henry M., Cook
Young, J. M., Henry
Young, L. C., Christian
Young, L. W., Wayne
Young, Richard Hale, Cook
Young, Samuel, Cook
Young, Tommy R., Wabash
Youngerman, W. M., Champaign

Zarcone, V. P., Macon
Zee, Maurice L., Cook
Zeiss, Fred R., Cook
Zelenik, John S., Lake
Zelezinski, Leo A., Cook
Zelik, William B., Logan
Zeman, Alvin A., Cook
Zeman, Erwin D., Effingham
Zeman, Theodore C., Cook
Zidek, Emil Richard, Cook
Ziegler, D. F., Winnebago
Ziffren, Sidney E., Rock Island
Zimmerman, Lazar E., McHenry
Zimmerman, Nathan, Cook
Zimring, Allan J., Cook
Zimring, William J., Cook
Zollett, Phillip B., Cook
Zolt, Nathan, Cook
Zurawski, Walter F., Cook
Zurfli, Clarence J., Cook
Zweig, Mitchell, Cook

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

The December 11th meeting of the Greene County Medical Society was held in Roodhouse at the Elm Inn. The speaker was Doctor Arthur E. Walters of Springfield who spoke on "Eye and Ear Conditions of Interest to the General Practitioner" which was of practical value to all who heard it. The lecture called out many questions and a prolonged and profitable discussion. Doctor Walter Stevenson of Quincy, Councilor, was present and participated in the program.

The following officers were elected for the coming year: President, A. T. Robertson, M.D. of Roodhouse; Vice-President, D. R. Martin, M.D. of Carrollton; Secretary and Treasurer, W. H. Garrison, M.D.; Censon, C. O. Bulger, M.D. of Greenfield; Delegate, C. A. Billings, M.D. of Hillview to serve in the place of A. D. Wilson, M.D. who is now in the Armed Forces.

Bert E. Caldwell, for fifteen years executive secretary of the American Hospital Association, has resigned, effective on the appointment of a successor. Dr. Caldwell has also been editor of the association's publication "Hospitals" since its establishment seven years ago. Dr. Caldwell graduated at Barnes Medical College, St. Louis, in 1898.

COMING MEETINGS

January 12 — Effingham County — Benwood Hotel — 6:30 P.M.

January 12 — Williamson County — Herrin — Herrin Hospital — Evening

January 12 — Kankakee County — Kankakee — 12:00 noon

January 14 — Crawford, Jasper, Clark, Lawrence — Robinson — Woodworth Hotel — 6:30 P.M.

January 14 — Champaign County — Champaign — 6:30 P. M.

January 14 — LaSalle and Bureau Counties — Kaskaskia Hotel, LaSalle — 6:30 P.M.

January 19 — Peoria Medical Society — Peoria — Evening

January 20 — DuPage County — Elmhurst Community Hospital, Elmhurst — Evening —Alexander Brunschwig — Surgery

January 21 — Marion County — Centralia — Evening — St. Mary's Hospital

January 21 — Livingston

January 22 — Will-Grundy County — Joliet — Louis Joliet Hotel, Noon

January 27 — Christian County — Taylorville — Evening

January 29 — Will-Grundy County — Joliet —Louis Joliet Hotel — Noon

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MARRIAGES

Raymond J. McGann, Mount Sterling, Illinois, to Miss Mary Agnes Gray of St. Joseph, Missouri, recently.

DEATHS

J. W. Edward Bitter, Quincy; University of Illinois College of Medicine, 1887. Practiced in Quincy for nearly 56 years. Died December 17, 1942 at the age of 79.

Frank Hamlin Blackmarr, Chicago; Hahnemann Medical College and Hospital, Chicago, 1897. Mem-

ber of the Radiological Society of North America, Inc.; on the staff of the Chicago Memorial Hospital; Died September 16, 1942 at the age of 71.

JOHN ERSKINE BURNS, New Dennison; St. Louis College of Physicians and Surgeons, 1902. Physician for 40 years for New Burnside and Creal Springs. Died December 23, 1942 at the age of 65 years.

ALAN D. CALHOUN of the Alton Clinic, Alton; Washington University School of Medicine, 1933. Member of the teaching staff of Washington University at Barnes Hospital. Fellow of the American Board of Ophtholmology. Died December 16, 1942 at the age of 35 years.

JOHN PHILIP GIBBS, Chicago; Harvey Medical College, 1905. Junior Medical staff, St. Elizabeth's Hospital. Died December 5, 1942 at the age of 80.

WILLIAM N. GOONE, Chicago; University of Illinois College of Medicine, 1912. Died of heart attack December 27, 1942 at the age of 55.

JAMES R. GREER, Danville; Rush Medical College, 1912. Assistant professor at Rush and assistant physician at the Presbyterian Hospital. Died December 2, 1942 at the age of 64.

CHARLES A. HANDLEY, Brocton; Louisville Medical College, 1894. Retired two years ago because of ill health. Died December 13, 1942 at the age of 74.

NATHAN J. HUGHES, Waverly; Cincinnati College of Medicine & Surgery, 1879. In 1929 was awarded a Fifty Year Pin by the Morgan County Medical Society. Died November 25, 1942 at the age of 88 years.

O. E. MATTER, Maywood; Chicago Homeopathic Medical College, 1896; University of Illinois College of Physicians and Surgeons, 1904. Died December 3, 1942 at the age of 70.

WILLIAM MARKLE MILLER, Cabery; Rush Medical College, 1884. Had practiced in Cabery 58 years. Was given the gold award by the Illinois Central Railroad for 50 years' service as railroad physician. Died December 14, 1942 at the age of 84.

JAMES T. MUSSELMAN, Paris; Louisville Medical College, 1879. Died December 17, 1942 at the age of 88.

NORMAN PEARSON, Pontiac; Northwestern University Medical School, 1901. Not in practice for some years. Died November 19, 1942 in Peoria at the age of 65 years.

ROSE READING, Chicago; Bennett College of Eclectic Medicine and Surgery, 1886. At one time examining physician of the Juvenile Court. Died December 22, 1942 at the age of 74.

ALEXANDER P. ROBERTSON, Alton; St. Louis University Medical School, 1913. Past president of Madison County Medical Society. Served overseas in World War No. 1 as First Lieutenant. Served as City Health Commissioner, and was director of the Social Hygiene Clinic for 17 years. Died suddenly of a heart attack on November 20, 1942 at the age of 52.

HARRY EUGENE TEASLEY, Robinson; Tulane University of Louisiana School of Medicine, 1928. Major in the Medical Corps and recently stationed in Memphis, Tennessee where he was taking special training. Died suddenly of a heart attack November 27, 1942 at the age of 40.

JOHN S. WALLNER, Chicago; Illinois Medical College, Chicago, 1904. Died November 5, 1942 at the age of 67.

JAMES L. WELLS, Chicago; Harvey Medical College, 1902. For many years on the staff of Englewood Hospital. Practiced on south side for nearly 45 years. Died December 14, 1942 at the age of 72 years.

JAMES A. WRIGHT, Morrison; Beaumont Hospital Medical College, St. Louis, 1887. Practiced in Morrison for about 25 years retiring a year ago. Died November 25, 1942 at the age of 84.

TELLS HOW A SURGEON REMOVED LIVE SHELL FROM MAN'S THIGH

The Regular London, England, Correspondent Of A. M. A. Journal Describes Hazardous Operation On An Air Raid Victim

The courage of a surgeon who removed a live shell from the thigh of a man during a recent air raid on London is described by the regular London correspondent of *The Journal of the American Medical Association* in the December 12 issue. The correspondent reports that:

"In a recent speech Dr. Donald Hall, chairman of the Royal County Hospital, told of a man brought to the hospital with a thigh injured during a recent air raid. Under the wound of entry a sharp pointed object could be felt. At the time of injury the enemy had dropped all their bombs and were headed home with their guns blazing. It was decided that the object therefore was not a bomb fragment and was thought possibly to be part of a fractured femur. X-ray examination, however, revealed that an unexploded cannon shell was embedded in the tissues. The bomb disposal unit was called and the officer identified the shell from the roentgenogram as of the armor piercing variety which explodes on impact. What was to be done? If

the shell exploded, at best the man would lose his leg, which would be shattered; very likely he would lose his life. If the shell exploded during the operation for its extraction, the surgeon and every one in the operating room ran great risks, especially for loss of eyesight. The removal was necessary, danger or no danger. The patient was left in blissful ignorance and the surgeon, his assistant, the anesthetist and the nurses got to work. Swiftly and successfully the surgeon performed the most delicate and dangerous operation of his career and removed the shell. Within half an hour of leaving the ward the patient was back in bed. The name of the surgeon was not revealed. During the operation, according to this report, an assistant surgeon appeared at the door of the operating room to inquire what were his prospects for promotion to the senior staff!"

P. R. N.

The Jocular Jingles of C. G. F.

by

Charles G. Farnum M. D.

Peoria, Ill.

RESOLUTIONS

Since our New Years resolutions are accepted institutions, I suppose I ought to make myself a few. It's a waste of time to make them, since I always promptly break them, yet I think I might perhaps keep one or two.

But I want resolves less wasteful and distinctly less distasteful than the resolutions I have heard or seen; where desires for work attack us, or we turn our backs on Bacchus, or divorce ourselves from Lady Nicotine.

So I think that my solution of the New Years resolution, is to laugh more at merry things each day. For my journey is more sunny, through this world that is so funny, when I let my sense of humor lead the way.

SEASONABLE SONNETS

JANUARY

We gaily start upon another year
In boisterous way with much of noise and song,
Then make fine resolutions which I fear
Are far too fragile to endure for long.
Outside in mountain ranges drifts the snow,
We slither as we drive upon the street,
Thermometers dejectedly sink low,
We shiver from our occiput to feet.
Yet this is when we play the best of golf
Or raise fine gardens, by an open fire,
By our imagination carried off—
Performance does not circumvent desire.
We stay indoors and moan when we must move—
The calendar is young, it should improve.

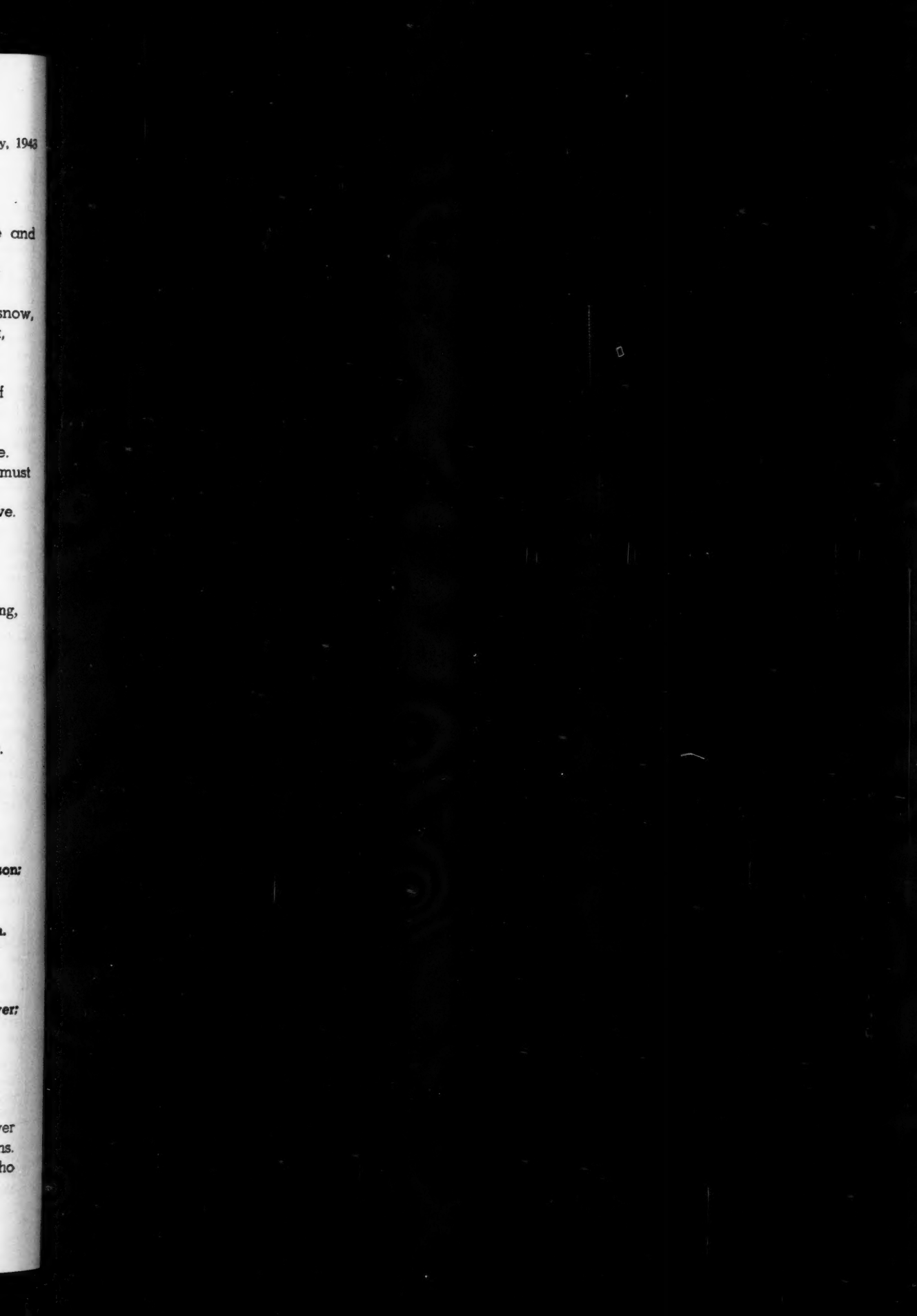
SNOW

The poets rave about the snow
In chaste white flakes from heaven falling,
Symbolic of all purity,
The joys of childhood days recalling.

I also rave about the snow,
The poets point of view reversing,
For all I see in snow is grief
And vent my wrath in vicious cursing.

CHANGE

Our abode may change
And our work may change
And our pleasures change with the season;
Our pursuits may change
And our habits change
And our interest change for no reason.

Our religion may change
And our politics change
And our sins may change if we're clever;
And our health may change
AND OUR FRIENDS MAY CHANGE
But our enemies last forever.

Professor Paresis suggests that you never offer excuses, apologies nor explanations. Go ahead and get the job done and let who will complain.